Drinking Water Surveillance Program

WINDSOR WATER SUPPLY SYSTEM

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WINDSOR
WATER SUPPLY SYSTEM

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1988

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

WINDSOR WATER SUPPLY SYSTEM
1988 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The Windsor Water Treatment Plant is a conventional treatment plant which treats water from the Detroit River. The process consists of coagulation, flocculation, sedimentation, filtration, disinfection and fluoridation. This plant has a design capacity of 182 x 1000 m^3/day and serves a population of approximately 222,700.

Water samples from the raw, treated and two distribution system sites were taken on a monthly basis. The Windsor Water Treatment Plant was sampled for 160 parameters. Parameters were divided into the following groups: Bacteriological, Inorganic and Physical (Laboratory Chemistry, Field Chemistry and Metals) and Organic (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles). Chlorophenols and Specific Pesticides were analysed in June and November only.

A summary of results is shown in Table 1.

Inorganic and Physical parameters were below any applicable health related ODWOs except on two occasions where the ODWO for Turbidity and Lead were exceeded. The District Officer was notified in each case.

Of a total of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1988 the DWSP sampling results indicated that the Windsor Water Treatment Plant produced an acceptable quality of water at the plant but this quality did not appear to be maintained in all parts of the distribution system.

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS

SUMMARY TABLE BY SCAN

SCAN	RAW			TREATED			SITE 1			SITE 2		
	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE
BACTERIOLOGICAL	46	45	97	53	16	30	47	22	46	37	14	37
CHEMISTRY (FLD)	39	39	100	78	78	100	131	131	100	135	135	100
CHEMISTRY (LAB)	267	230	86	260	183	70	421	334	79	430	345	80
METALS	312	170	54	312	150	48	564	286	50	541	275	50
CHLOROAROMATICS	182	0	0	182	0	0	154	0	0	154	0	0
CHLOROPHENOLS	12	0	0	12	0	0	.	.	.	.	.	.
PAH	204	0	0	204	0	0	.	.	.	.	.	.
PESTICIDES & PCB	430	0	0	430	0	0	375	0	0	375	0	0
PHENOLICS	13	0	0	13	1	7	.	.	.	.	.	.
SPECIFIC PESTICIDES	56	0	0	56	0	0	0	0	0	0	0	0
VOLATILES	345	1	0	344	52	15	287	43	14	316	50	15
TOTAL	1906	485		1944	480		1979	816		1988	819	

THE ODWO FOR LEAD (50UG/L) WAS EXCEEDED ONCE, NO OTHER HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

WINDSOR WATER SUPPLY SYSTEM

1988 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The DWSP was initiated at the Windsor Water Supply System in the spring of 1986. Annual reports were published for 1986 (ISBN 0-7729-2569-0) and 1987 (ISSN 0839-895X).

This report contains information and results for 1988.

PLANT DESCRIPTION

The Windsor Water Treatment Plant is a conventional treatment plant which treats water from the Detroit River. The process consists of coagulation, flocculation, sedimentation, filtration, disinfection and fluoridation. This plant has a design capacity of 182 x 1000 m^3/day and flows for sampling days ranging from 153 x 1000 m^3/day to 266 x 1000 m^3/day. It serves a population of

approximately 222,700.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

METHODS

Water samples were obtained from four DWSP approved locations;

i) Plant Raw - The water originated from the lowlift chamber prior to chlorination and was sampled through a copper sample line. The sample tap is located by the screen chamber.

ii) Plant Treated - The water originated from the highlift discharge after addition of all treatment chemicals and was sampled through a copper sample line. The sample tap is located by the highlift pumps.

iii) Distribution System - Site 1 - This house is approximately 2 kilometers from the plant. Water was sampled through galvanized copper pipe from the kitchen tap.

iv) Distribution System - Site 2 - This house is approximately 11 kilometers from the plant. Water was sampled through copper lines from the kitchen tap.

FIGURE 2

WINDSOR WATER TREATMENT PLANT

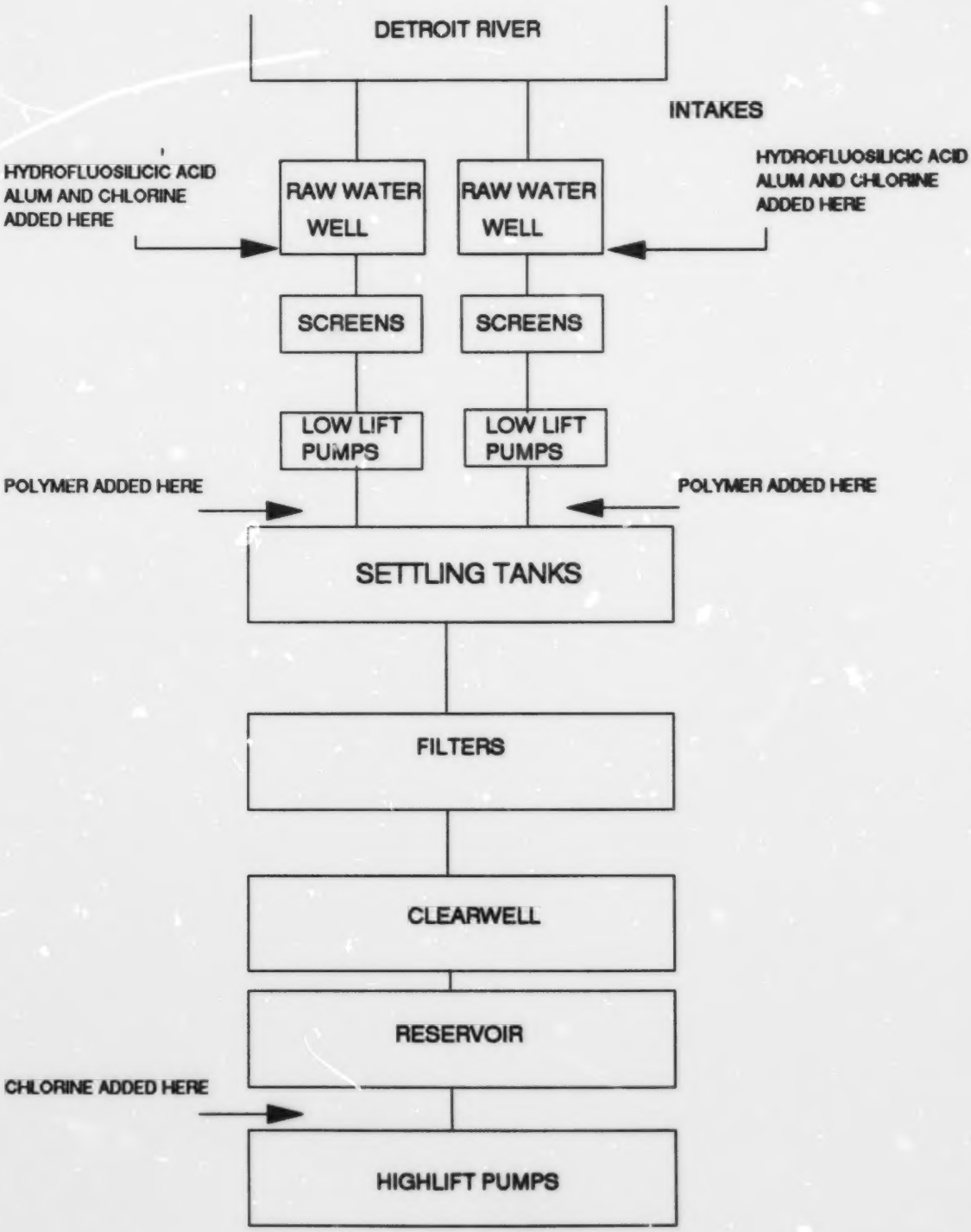

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

WINDSOR WATER SUPPLY SYSTEM

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

WINDSOR WATER SUPPLY SYSTEM

LOCATION:	3665 WYANDOTTE STREET EAST WINDSOR, ONTARIO N8Y 1G4 (519-255-2786)
SOURCE:	RAW WATER SOURCE - DETROIT RIVER
RATED CAPACITY:	182 (1000 M^3/DAY)
OPERATION:	MUNICIPAL (WINDSOR UTILITIES COMMISSION)
PLANT SUPERINTENDENT:	J. C. FRASER
MINISTRY REGION:	SOUTHWESTERN
DISTRICT OFFICER:	J. DRUMMOND

MUNICIPALITY SERVED	POPULATION
SANDWICH SOUTH	3,748
SANDWICH WEST	13,744
ST. CLAIR BEACH	3,026
TECUMSEH	7,208
WINDSOR	195,028

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

At all distribution system locations two types of samples were obtained: a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples are used to make an assessment of the amount by which the levels of inorganic compounds and metals may be changed on standing, due to leaching from (or deposition on), the plumbing system. The only analysis carried out on standing samples therefore, are General Chemistry and Metals. The free flow sample represented fresh water from the distribution main that had been flowing at the sample tap for five minutes before being sampled.

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the plant was five hours then there would be a five hour interval between the raw and treated sampling. Similarly, if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water from the plant.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in the same manner.

Sample day flow, treatment chemical dosages and field measurements such as Turbidity, Chlorine Residuals, pH and Temperature were recorded on the day of sampling and were entered onto the DWSP data base as submitted.

RESULTS

The Windsor Water Supply System was sampled for approximately 160 parameters on a monthly basis. The raw and treated water was sampled twice in November.

The Specific Pesticides and Chlorophenols scans were sampled in June and November only. Polynuclear Aromatic Hydrocarbons and Phenolics were only analysed in the raw and treated water from the plant. As a result of an unforeseen emergency the laboratory capacity was exceeded and analysis for volatiles could not be carried out when the samples were received. Since analysis for volatiles is no longer valid after four weeks of storage, volatile results for February are not available.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analysed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analysed in the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and

aesthetic objectives for 49 parameters, these are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameters Listing System (PALIS) recently published (ISBN 0-7729-4461-X) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Although some of the parameters measured on DWSP may be present in the raw and treated water as a result of pollution, many of the compounds detected are naturally occuring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable results as defined by established MOE laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of the presence of a specific contaminant that is repeatedly detected at these levels, the occasional finding of a trace level of a contaminant is not considered to be significant. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Positive results for the Bacteriology scan were present fifty-two times in the treated water and distributed water. The positive parameters were Standard Plate Count, Fecal Coliform, Total Coliform and/or Total Coliform Background.

Total Coliforms were found by the membrane filtration method in the January and February treated water samples at 360 counts/100mL and 18 counts/100mL respectively, in the February, August and October Site 1 water samples at 52, 173 and 150 counts/100mL and in the September Site 2 water sample at 160 counts/100mL. The presence/absence test determined Coliform bacteria to be present within 48 hours in the January and February treated water and the February and August Site 1 water. Fecal Coliforms were also determined to be present in the January treated water sample and the August Site 1 water sample. Escherichia coli (E. coli) was determined to be present in the August Site 1 water sample. The District Officer was notified on all occasions.

Standard Plate Count is a test used to supplement routine analysis for Coliform bacteria. The limit for Standard Plate Count (at 35°C for 48 hours) in the ODWO is 500 organisms per mL (based on a geometric mean of 5 or more samples). High Standard Plate Counts were present in the January and September treated water samples, the August and October Site 1 water samples and the August Site 2 water sample. The high Standard Plate Counts in the distribution

system may be indicative of a deterioration in conditions (coliforms and/or fecal coliforms were detected in some of these samples). The deteriorated quality may reflect increased bacteriological growth especially as a result of the increased temperature of the water during the summer months.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Full interpretation of bacteriological quality cannot be made on the basis of single samples. Further, bacteriological limits were developed in acknowledgement that the presence of coliforms may be detected due to their non-uniform distribution throughout the distribution system and the fact that their enumeration is subject to considerable variation. For these reasons, the occasional finding of low numbers of coliform organisms is not unexpected. Routine bacteriological monitoring, as outlined in the ODWOs is carried out by the operating authority. For the Windsor Supply, results from the routine monitoring program do not confirm the presence of coliforms in the treated water.

Inorganic and Physical Parameters

Laboratory and Field Chemistry

The results for the Laboratory Chemistry and Field Chemistry scans were below applicable health related ODWOs except for Turbidity in the April treated water.

Turbidity in water is caused by the presence of suspended matter such as clay, silt, colloidal particles, plankton and other microscopic organisms. The most important potential health effect of Turbidity is its interference with disinfection in the treatment plant and maintenance of a chlorine residual. The ODWO of 1 Formazin Turbidity Unit (FTU) is only applicable to treated water leaving the plant.

The April treated water sample had a Laboratory Turbidity value of 1.14 FTU exceeding the ODWO of 1 FTU. The District Officer was notified. The corresponding Field Turbidity value of .80 FTU did not support the turbidity result as measured in the MOE laboratory and in comparison with other turbidity values the result reported by the plant appears to be the more reliable value.

The aesthetic ODWO for Colour of 5 True Colour Units (TCU) was exceeded in the February Site 1 free flow water sample with a value of 6 TCU.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the delivered water may increase in the distribution system due to the warming effect of the soil in late summer and fall and/or as a result of higher temperatures in the source water. The desired ODWO was exceeded fourteen times in the treated water and free flow distributed water.

As part of the treatment process, Hydrofluosilicic Acid is added to the treated water (Table 3). Where fluoridation is practiced, the fluoride concentration recommended in the ODWOs is 1.2 mg/L, plus or minus 0.2 mg/L. Maintenance of this level can generally be observed in the Fluoride levels in the treated and distribution system samples. Fluoride values were low in April, October and November. The September treated water value of 0.63 mg/L appears to be an anomalous result since the rest of the fluoride values for that block of water are greater than 1.1 mg/L.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. The Langelier Index for Windsor varies from slightly

positive to slightly negative.

Metals

The results reported for the Metals scan were below any applicable health related ODWOs except on one occasion.

Copper, Lead, Iron, Manganese and Zinc levels were lower in the treated water as compared to the raw water. This is a result of the treatment process. The addition of Alum as a coagulant to the raw water and the resulting coagulation/settling process has been shown to reduce the levels of most metals.

The August Site 1 free flow sample had a lead value of 400.0 ug/L, exceeding the ODWO of 50.0 ug/L. The District Officer was notified.

The aesthetic ODWO of 300 ug/L for Iron was exceeded in the February Site 1 water sample with a value of 580.0 ug/L. When the ODWO for Iron is exceeded, it may result in a brownish colour to laundered goods, produce a bitter astringent taste and give colour to the water.

Elevated levels of Cadmium (at Site 1 only), Copper, Lead and Zinc were detected in the standing samples as compared to the free flow distribution samples thus, indicating that these metals were leached from the household plumbing as the water stood overnight. Although the Langelier Index indicates minimal potential for

corrosion some metals will be leached in standing samples in most supplies. Site 1 has galvanized piping in the sampling line and this may be the cause of the high metal and high colour results found.

Mercury levels increased in all samples throughout the year. Over the past year in the DWSP it has been observed that potassium dichromate, used to preserve Mercury samples, has a limited shelf-life and may show false positives for the presence of Mercury. As the preservative deteriorates, Mercury levels increase due to interferences, when preservatives are replaced the levels decrease. As a result, many of the elevated values of mercury provided in the data tables are greater than the level actually present.

At present, there is no evidence that Aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of residual Aluminum in the treated water is important to indicate the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 ug/L as Al in the water leaving the plant to avoid problems in the distribution system. Aluminum values exceeded the ODWO operational guideline eight times in the treated water from March to October.

Organic Parameters

Chloroaromatics

The results of the Chloroaromatics scan showed that one parameter was detected:

Hexachloroethane

Hexachloroethane was detected at trace levels, once in the treated water, once in the Site 1 water and twice in the Site 2 water.

Review of these results, along with information from other water supplies on DWSP, would indicate that certain Chloroaromatics appear more frequently in the treated water than in the raw and almost always only at trace levels. These occurrences could possibly be due to a reaction of chlorine with organics present in the water or in the distribution system.

Pesticides and PCB (Polychlorinated Biphenyls)

The results of the Pesticides and PCB scan showed that no PCCBs were detected and that three pesticides were detected:

Alpha BHC

Lindane

Atrazine

There are several isomers of BHC (Benzene Hexachloride); gamma BHC

is the active ingredient of the pesticide Lindane, while alpha BHC is the isomer predominantly found in surface water from the Great Lakes Basin as indicated in results from other water supplies on DWSP.

Alpha BHC was detected at trace levels, nine times in the raw water, ten times in the treated water, eleven times in the Site 1 water and nine times in the Site 2 water.

Lindane was detected, at trace levels, once in the raw water, three times in the treated water, four times in the Site 1 water and once in the Site 2 water.

Atrazine was detected once at trace levels, once in the raw water, twice in the treated water and once in the Site 1 water.

Specific Pesticides

Results of the Specific Pesticides scan showed that no Specific Pesticides were detected.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 ug/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolics were detected at 1.0 ug/L in the December treated water sample. Phenolics were detected

at trace levels, nine times in the raw water and six times in the treated water. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polynuclear Aromatic Hydrocarbons (PAH)

The results of the PAH scan showed that no PAHs were detected.

Volatiles

The results of the Volatiles scan showed that ten parameters, other than Trihalomethanes(THMs), were detected:

Benzene
Toluene
Ethylbenzene
Meta and Para-Xylene
Ortho-Xylene
Styrene
1,2-Dichloroethane
Tetrachloroethylene
1,2-Dichlorobenzene

Benzene was detected at trace levels, three times in the treated water, three times in the Site 1 water and five times in the Site 2 water.

Toluene was detected at trace levels, once in the raw water, seven times in the treated and Site 1 water and eight times in the Site

2 water. The detection of toluene at low, trace levels is a laboratory artifact derived from the analytical methodology. The purge-and-trap analytical technique depends on the purging of the volatile organics in the water sample with helium gas onto a Tenax trapping column. The volatile materials are subsequently thermally desorbed, separated and quantified. Tenax, a toluene-like polymeric material, tends to decompose sporadically upon heating into toluene and other aromatic componenets (ethylbenzene and xylene) giving instrument blanks in the order of 0.05 ug/L.

The detected trace levels of Styrene are also considered to be laboratory artifacts due to the outgassing of monomeric styrene from the polystyrene shipping containers. The sporadic background levels from this source are in the order of 0.05 ug/L.

Ethylbenzene was detected at trace levels, once in the raw water, four times in the treated water, seven times in the Site 1 water and eight times in the Site 2 water.

Meta and Para-Xylene (M-Xylene and P-Xylene) are analysed together, the Meta-isomer may be present without the Para-isomer but the latter is always present with the former. M-Xylene was detected, at trace levels once in the treated water, three times in the Site 1 water and seven times in the Site 2 water. P-Xylene was detected once in the treated water and Site 1 water sample and four times in the Site 2 water sample.

Ortho-Xylene (O-Xylene) was detected at trace levels, once in the treated water, four times in the Site 1 water and five times in the Site 2 water.

The volatiles listed above are typically found on an occasional basis at other water supplies included on the DWSP usually at trace levels.

1,2-Dichloroethane was detected at a trace level, once in the treated water.

Tetrachloroethylene was detected at 0.55 ug/L in the April Site 2 water sample. The World Health Organization (WHO) Tentative Guideline Value (TGV) for tetrachloroethylene in drinking water is 10 ug/L. It was also detected at trace levels, in the treated and distributed water sampled in May and in the October Site 2 sample.

1,2-Dichlorobenzene was detected at trace levels, once in the raw water and once in the treated water.

THMs are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane, Dichlorobromomethane and Total THMs were detected in all treated water samples. Bromoform was detected at trace levels. All Total THM occurrences, ranging from 27.4 ug/L to 70.6 ug/L, were well below the ODWO of 350 ug/L. THMs were present at trace levels in two of the raw water samples.

CONCLUSIONS

The Windsor Water Supply System for the sample year of 1988 produced water of acceptable quality at the plant and this quality was maintained in the distribution system.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1988 except on one occasion when the ODWO for Lead was exceeded.

RECOMMENDATIONS

One recommendation can be made:

1) The reason for the elevated levels of Aluminum in the treated water should be investigated.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS SAMPLE DAY CONDITIONS FOR 1988

	SAMPLE DAY CONDITIONS		TREATMENT CHEMICAL DOSAGES (MG/L)				
			PRE-CHLORINATION	COAGULATION	FLUORIDATION	COAGULATION AID	POST-CHLORINATION
DATE	RETENTION TIME(HRS)	FLOW (1000M3)	CHLORINE	ALUM LIQUID	HYDROFLUOSILICIC ACID	POLYELECTROLYTE	CHLORINE
JAN 13	16.0	197.5	1.93	44.72	1.20	.14	1.17
FEB 10	24.0	159.1	1.67	10.66	1.15	.05	.13
MAR 16	19.8	156.2	1.69	7.74	1.12	.05	.07
APR 13	20.0	153.4	2.42	37.00	1.00	.15	.23
MAY 11	20.6	165.2	2.18	13.92	1.12	.06	.12
JUN 15	12.5	254.1	1.98	17.74	1.02	.05	.12
JUL 13	12.0	261.3	2.03	18.52	1.08	.05	.10
AUG 10	12.0	266.3	2.09	18.39	1.06	.05	.17
SEP 14	13.8	226.7	2.11	17.34	1.12	.05	.16
OCT 13	24.0	.	1.68	16.88	1.10	.06	.11
NOV 23	16.9	163.2	1.88	35.39	1.10	.11	.03
NOV 28	.	159.0	1.97	24.30	1.15	.08	.10
DEC 08	17.6	181.8	1.90	27.95	1.04	.12	.12

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	AEROMONAS SP	.	.	.	2	0	0	2	0	0	.	.	.
	E. COLI P/A	.	.	.	2	0	0	2	1	0	.	.	.
	FECAL COLIFORM MF	13	12	0	.	.	.	.	.	.	.	.	.
	FECAL COLIFORM	.	.	.	2	1	0	2	1	0	.	.	.
	STANDRD PLATE CNT MF	7	7	0	11	5	0	10	7	0	10	8	0
	P/A BOTTLE	.	.	.	8	2	0	7	2	0	7	0	0
	STAPH AUREUS	.	.	.	2	0	0	2	0	0	.	.	.
	COLIFORM	.	.	.	2	2	0	2	2	0	.	.	.
	TOTAL COLIFORM MF	13	13	0	12	3	0	10	4	0	10	2	0
	T COLIFORM BCKGRD MF	13	13	0	12	3	0	10	5	0	10	4	0
*TOTAL SCAN BACTERIOLOGICAL		46	45	0	53	16	0	47	22	0	37	14	0
*TOTAL GROUP BACTERIOLOGICAL		46	45	0	53	16	0	47	22	0	37	14	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	13	13	0	22	22	0	24	24	0
	FLD CHLORINE FREE	.	.	.	13	13	0	15	15	0	15	15	0
	FLD CHLORINE (TOTAL)	.	.	.	13	13	0	22	22	0	24	24	0
	FLD PH	13	13	0	13	13	0	24	24	0	24	24	0
	FLD TEMPERATURE	13	13	0	13	13	0	24	24	0	24	24	0
	FLD TURBIDITY	13	13	0	13	13	0	24	24	0	24	24	0
*TOTAL SCAN CHEMISTRY (FLD)		39	39	0	78	78	0	131	131	0	135	135	0
CHEMISTRY (LAB)	ALKALINITY	13	13	0	13	13	0	24	24	0	24	24	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHEMISTRY (LAB)	CALCIUM	13	13	0	13	13	0	24	24	0	24	24	0
	CYANIDE	13	0	0	13	0	0	12	0	0	12	0	0
	CHLORIDE	13	13	0	13	13	0	24	24	0	24	24	0
	COLOUR	13	6	7	13	0	13	24	2	22	24	0	24
	CONDUCTIVITY	13	13	0	13	13	0	24	24	0	24	24	0
	FLUORIDE	13	13	0	13	13	0	24	24	0	24	24	0
	HARDNESS	13	13	0	13	13	0	24	24	0	24	24	0
	IONCAL	13	7	0	13	7	0	24	12	0	24	12	0
	LANGELIERS INDEX	13	13	0	6	6	0	13	13	0	22	22	0
	MAGNESIUM	13	13	0	13	13	0	24	24	0	24	24	0
	SODIUM	13	13	0	13	13	0	24	24	0	24	24	0
	AMMONIUM TOTAL	13	12	1	13	6	7	24	11	13	24	12	12
	NITRITE	13	10	3	13	1	8	24	0	20	24	2	20
	TOTAL NITRATES	13	13	0	13	12	1	24	24	0	24	24	0
	NITROGEN TOT KJELD	13	13	0	13	10	3	24	21	3	24	21	3
	PH	13	13	0	13	13	0	24	24	0	24	24	0
	PHOSPHORUS FIL REACT	13	10	3	13	3	9	.	.	.	.	.	.
	PHOSPHORUS TOTAL	13	9	4	13	1	7	.	.	.	.	.	.
	SULPHATE	7	7	0	7	7	0	12	12	0	12	12	0
	TURBIDITY	13	13	0	13	13	0	24	23	1	24	24	0
*TOTAL SCAN CHEMISTRY (LAB)		267	230	18	260	183	48	421	334	59	430	345	59
METALS	SILVER	13	0	3	13	1	2	24	1	9	23	0	13

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	ALUMINUM	13	13	0	13	13	0	24	24	0	23	23	0
	ARSENIC	13	0	13	13	0	13	24	0	24	23	0	23
	BARIUM	13	13	0	13	13	0	24	24	0	23	23	0
	BORON	13	6	7	13	6	7	24	11	13	23	8	15
	BERYLLIUM	13	0	9	13	0	8	24	0	14	23	0	12
	CADMIUM	13	0	3	13	0	0	24	0	14	23	0	3
	COBALT	13	0	13	13	0	11	24	0	23	23	2	21
	CHROMIUM	13	7	6	13	6	7	24	11	13	23	9	14
	COPPER	13	13	0	13	10	3	24	24	0	23	23	0
	IRON	13	12	1	13	5	8	24	6	17	23	4	19
	MERCURY	13	10	1	13	10	1	12	4	7	12	7	4
	MANGANESE	13	12	1	13	10	3	24	24	0	23	23	0
	MOLYBDENUM	13	7	6	13	13	0	24	22	2	23	20	3
	NICKEL	13	2	8	13	2	4	24	2	13	23	2	17
	LEAD	13	13	0	13	4	8	24	24	0	23	23	0
	ANTIMONY	13	6	7	13	6	7	24	10	14	23	13	10
	SELENIUM	13	0	10	13	0	11	24	0	23	23	0	20
	STRONTIUM	13	13	0	13	13	0	24	24	0	23	23	0
	TITANIUM	13	12	1	13	13	0	24	23	1	23	23	0
	THALLIUM	13	0	5	13	0	7	24	0	7	23	1	3
	URANIUM	13	12	1	13	10	3	24	14	10	23	15	8
	VANADIUM	13	7	6	13	10	3	24	14	10	23	10	13
	ZINC	13	12	1	13	7	6	24	24	0	23	23	0
*TOTAL SCAN METALS		312	170	102	312	150	112	564	286	214	541	275	198
*TOTAL GROUP INORGANIC & PHYSICAL		618	439	120	650	411	160	1116	751	273	1106	755	257

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHLOROAROMATICS	HEXACHLOROBUTADIENE	13	0	0	13	0	0	11	0	0	11	0	0
	123 TRICHLOROBENZENE	13	0	0	13	0	0	11	0	0	11	0	0
	1234 T-CHLOROBENZENE	13	0	0	13	0	0	11	0	0	11	0	0
	1235 T-CHLOROBENZENE	13	0	0	13	0	0	11	0	0	11	0	0
	124 TRICHLOROBENZENE	13	0	0	13	0	0	11	0	0	11	0	0
	1245 T-CHLOROBENZENE	13	0	0	13	0	0	11	0	0	11	0	0
	135 TRICHLOROBENZENE	13	0	0	13	0	0	11	0	0	11	0	0
	HCB	13	0	0	13	0	0	11	0	0	11	0	0
	HEXACHLOROETHANE	13	0	0	13	0	1	11	0	1	11	0	2
	OCTACHLOROSTYRENE	13	0	0	13	0	0	11	0	0	11	0	0
	PENTACHLOROBENZENE	13	0	0	13	0	0	11	0	0	11	0	0
	236 TRICHLOROTOLUENE	13	0	0	13	0	0	11	0	0	11	0	0
	245 TRICHLOROTOLUENE	13	0	0	13	0	0	11	0	0	11	0	0
	26A TRICHLOROTOLUENE	13	0	0	13	0	0	11	0	0	11	0	0
*TOTAL SCAN CHLOROAROMATICS		182	0	0	182	0	1	154	0	1	154	0	2
CHLOROPHENOLS	234 TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	2345 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	2356 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	245-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	246-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	PENTACHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
*TOTAL SCAN CHLOROPHENOLS		12	0	0	12	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PAH	PHENANTHRENE	12	0	0	12	0	0	.	.	.	.	.	.
	ANTHRACENE	12	0	0	12	0	0	.	.	.	.	.	.
	FLUORANTHENE	12	0	0	12	0	0	.	.	.	.	.	.
	PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(A)ANTHRACENE	12	0	0	12	0	0	.	.	.	.	.	.
	CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.
	DIMETH. BENZ(A)ANTHR	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(E) PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(J) FLUORANTHEN	0	0	0	0	0	0	.	.	.	.	.	.
	BENZO(B) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.
	PERYLENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(K) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(A) PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(G,H,I) PERYLEN	12	0	0	12	0	0	.	.	.	.	.	.
	DIBENZO(A,H) ANTHRAC	12	0	0	12	0	0	.	.	.	.	.	.
	INDENO(1,2,3-C,D) PY	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(B) CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.
	ANTHANTHRENE	0	0	0	0	0	0	.	.	.	.	.	.
	CORONENE	12	0	0	12	0	0	.	.	.	.	.	.
*TOTAL SCAN PAH		204	0	0	204	0	0	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	13	0	0	13	0	0	11	0	0	11	0	0
	ALPHA BHC	13	0	9	13	0	10	11	0	11	11	0	9

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PESTICIDES & PCB	BETA BHC	13	0	0	13	0	0	11	0	0	11	0	0
	LINDANE	13	0	1	13	0	3	11	0	4	11	0	1
	ALPHA CHLORDANE	13	0	0	13	0	0	11	0	0	11	0	0
	GAMMA CHLORDANE	13	0	0	13	0	0	11	0	0	11	0	0
	DIELDRIN	13	0	0	13	0	0	11	0	0	11	0	0
	METHOXYCHLOR	13	0	0	13	0	0	11	0	0	11	0	0
	ENDOSULFAN I	13	0	0	13	0	0	11	0	0	11	0	0
	ENDOSULFAN II	13	0	0	13	0	0	11	0	0	11	0	0
	ENDRIN	13	0	0	13	0	0	11	0	0	11	0	0
	ENDOSULFAN SULPHATE	13	0	0	13	0	0	11	0	0	11	0	0
	HEPTACHLOR EPOXIDE	13	0	0	13	0	0	11	0	0	11	0	0
	HEPTACHLOR	13	0	0	13	0	0	11	0	0	11	0	0
	MIREX	13	0	0	13	0	0	11	0	0	11	0	0
	OXYCHLORDANE	13	0	0	13	0	0	11	0	0	11	0	0
	OPDDT	13	0	0	13	0	0	11	0	0	11	0	0
	PCB	13	0	0	13	0	0	11	0	0	11	0	0
	DDD	13	0	0	13	0	0	11	0	0	11	0	0
	PPDDE	13	0	0	13	0	0	11	0	0	11	0	0
	PPDDT	13	0	0	13	0	0	11	0	0	11	0	0
	AMETRINE	13	0	0	13	0	0	12	0	0	12	0	0
	ATRAZINE	13	0	1	13	0	2	12	0	1	12	0	0
	ATRATONE	13	0	0	13	0	0	12	0	0	12	0	0
	CYANAZINE	13	0	0	13	0	0	12	0	0	12	0	0
	DES ETHYL ATRAZINE	7	0	0	7	0	0	6	0	0	6	0	0
	DES ETHYL SIMAZINE	7	0	0	7	0	0	6	0	0	6	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	PROMETONE	13	0	0	13	0	0	12	0	0	12	0	0
	PROPAZINE	13	0	0	13	0	0	12	0	0	12	0	0
	PROMETRYNE	13	0	0	13	0	0	12	0	0	12	0	0
	METRIBUZIN	13	0	0	13	0	0	12	0	0	12	0	0
	SIMAZINE	13	0	0	13	0	0	12	0	0	12	0	0
	ALACHLOR	13	0	0	13	0	0	12	0	0	12	0	0
	METOLACHLOR	13	0	0	13	0	0	12	0	0	12	0	0
*TOTAL SCAN PESTICIDES & PCB		430	0	11	430	0	15	375	0	16	375	0	10
PHENOLICS	PHENOLICS	13	0	9	13	1	6	.	.	.	.	.	.
*TOTAL SCAN PHENOLICS		13	0	9	13	1	6	0	0	0	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	0	0	0	0	0	0	0	0	0	0	0	0
	2,4,5-T	2	0	0	2	0	0	.	.	.	.	.	.
	2,4-D	2	0	0	2	0	0	.	.	.	.	.	.
	2,4-DB	2	0	0	2	0	0	.	.	.	.	.	.
	2,4 D PROPIONIC ACID	2	0	0	2	0	0	.	.	.	.	.	.
	DICAMBA	2	0	0	2	0	0	.	.	.	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.	.	.	.
	SILVEX	2	0	0	2	0	0	.	.	.	.	.	.
	DIAZINON	2	0	0	2	0	0	.	.	.	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE											
		RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
SPECIFIC PESTICIDES	DICHLOROVOS	2	0	0	2	0	0	.	.	.	.	.	.
	CHLORPYRIFOS	2	0	0	2	0	0	.	.	.	.	.	.
	ETHION	2	0	0	2	0	0	.	.	.	.	.	.
	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.	.	.	.
	MALATHION	2	0	0	2	0	0	.	.	.	.	.	.
	MEVINPHOS	2	0	0	2	0	0	.	.	.	.	.	.
	METHYL PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	METHYLTRITHION	2	0	0	2	0	0	.	.	.	.	.	.
	PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	PHORATE	2	0	0	2	0	0	.	.	.	.	.	.
	RELDAN	2	0	0	2	0	0	.	.	.	.	.	.
	RONNEL	2	0	0	2	0	0	.	.	.	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.	.	.	.
	BENOMYL	2	0	0	2	0	0	.	.	.	.	.	.
	BUX	2	0	0	2	0	0	.	.	.	.	.	.
	CARBOFURAN	2	0	0	2	0	0	.	.	.	.	.	.
	CICP	2	0	0	2	0	0	.	.	.	.	.	.
	DIALLATE	2	0	0	2	0	0	.	.	.	.	.	.
	EPTAN	2	0	0	2	0	0	.	.	.	.	.	.
	IPC	2	0	0	2	0	0	.	.	.	.	.	.
	PROPOXUR	2	0	0	2	0	0	.	.	.	.	.	.
	CARBARYL	2	0	0	2	0	0	.	.	.	.	.	.
	BUTYLATE	2	0	0	2	0	0	.	.	.	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		56	0	0	56	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	BENZENE	12	0	0	12	0	3	10	0	3	11	0	5
	TOLUENE	12	0	1	12	3	4	10	2	5	11	3	5
	ETHYLBENZENE	12	0	1	12	0	4	10	0	7	11	0	8
	P-XYLENE	12	0	0	12	1	0	10	1	0	11	2	2
	M-XYLENE	12	0	0	12	0	1	10	0	3	11	0	6
	O-XYLENE	12	0	0	12	0	1	10	0	4	11	0	5
	STYRENE	4	0	2	4	0	0	3	0	0	3	0	2
	1,1 DICHLOROETHYLENE	12	0	0	12	0	0	10	0	0	11	0	0
	METHYLENE CHLORIDE	12	0	0	12	0	0	10	0	0	11	0	0
	T1,2DICHLOROETHYLENE	12	0	0	12	0	0	10	0	0	11	0	0
	1,1 DICHLOROETHANE	12	0	0	12	0	0	10	0	0	11	0	0
	CHLOROFORM	12	0	3	12	12	0	10	10	0	11	11	0
	111, TRICHLOROETHANE	12	0	0	12	0	0	10	0	0	11	0	0
	1,2 DICHLOROETHANE	12	0	0	12	0	1	10	0	0	11	0	0
	CARBON TETRACHLORIDE	12	0	0	12	0	0	10	0	0	11	0	0
	1,2 DICHLOROPROPANE	12	0	0	12	0	0	10	0	0	11	0	0
	TRICHLOROETHYLENE	12	0	0	12	0	0	10	0	0	11	0	0
	DICHLOROBROMOMETHANE	12	0	1	12	12	0	10	10	0	11	11	0
	112 TRICHLOROETHANE	12	0	0	12	0	0	10	0	0	11	0	0
	CHLORODIBROMOMETHANE	12	0	0	12	12	0	10	10	0	11	11	0
	T-CHLOROETHYLENE	12	0	0	11	0	1	10	0	1	11	1	2
	BROMOFORM	12	0	0	12	0	9	10	0	9	11	0	9
	1122 T-CHLOROETHANE	12	0	0	12	0	0	10	0	0	11	0	0
	CHLOROBENZENE	12	0	0	12	0	0	10	0	0	11	0	0
	1,4 DICHLOROBENZENE	12	0	0	12	0	0	10	0	0	11	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE	RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	1,3 DICHLOROBENZENE	12	0	0	12	0	0	10	0	0	11	0	0
	1,2 DICHLOROBENZENE	12	0	1	12	0	1	10	0	0	11	0	0
	TRIFLUOROCHLOROTOLUE	5	0	0	5	0	0	4	0	0	5	0	0
	ETHLYENE DIBROMIDE	12	0	0	12	0	0	10	0	0	11	0	0
	TOTL TRIHALOMETHANES	12	1	1	12	12	0	10	10	0	11	11	0
*TOTAL SCAN VOLATILES		345	1	10	344	52	25	287	43	32	316	50	44
*TOTAL GROUP ORGANIC		1242	1	30	1241	53	47	816	43	49	845	50	56
TOTAL		1906	485	150	1944	480	207	1979	816	322	1988	819	313

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours

2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. However the average of such data is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!LA	No Data: Laboratory Accident

!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
BACTERIOLOGICAL						
AEROMONAS SP ( )			**DET'N LIMIT = N/A**	**GUIDELINE = 0 (A1)**		
JAN	.	0	.	.	.	.
FEB	.	0	.	0	.	.
AUG	.	.	.	0	.	.
E. COLI P/A ( )			**DET'N LIMIT = N/A**	**GUIDELINE = N/A**		
JAN	.	0	.	.	.	.
FEB	.	0	.	0	.	.
AUG	.	.	.	1	.	.
FECAL COLIFORM MF (CT/100ML)			**DET'N LIMIT = 0**	**GUIDELINE = 0 (A1)**		
JAN	6	.	.	.	.	.
FEB	0	.	.	.	.	.
MAR	2	.	.	.	.	.
APR	18	.	.	.	.	.
MAY	3	.	.	.	.	.
JUN	1	.	.	.	.	.
JUL	8	.	.	.	.	.
AUG	8	.	.	.	.	.
SEP	11 T24	.	.	.	.	.
OCT	33 T48	.	.	.	.	.
NOV	334 A>	.	.	.	.	.
	56 T48	.	.	.	.	.
DEC	10 T48	.	.	.	.	.
FECAL COLIFORM ( )			**DET'N LIMIT = N/A**	**GUIDELINE = 0 (A1)**		
JAN	.	0	.	.	.	.
FEB	.	1	.	0	.	.
AUG	.	.	.	1	.	.
STANDRD PLATE CNT MF (CT/ML)			**DET'N LIMIT = 0**	**GUIDELINE = 500/ML (A1)**		
JAN	TOP	[illegible]	.	1	.	7
FEB	37	[illegible]	.	93	.	5
MAR	122	0	.	2	.	18
APR	940	[illegible]	.	56	.	13
MAY	2400 >	0	.	.	.	.
JUN	2400 >	0	.	23	.	17
JUL	22000	1	.	0	.	2
AUG	14000	25	.	2400 >	.	1600
SEP	.	[illegible] >	.	3 <=>	.	330 T24
OCT	.	[illegible] <=>	.	2400 >	.	1 <=>

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW
NOV		.	1 <=>	.	3 <=>	.	2 <=>
		.	3 <=>	.	.	.	.
P/A BOTTLE ( )			DET'N LIMIT = 0		GUIDELINE = 0 (A1*)		
JAN		.	1	.	0	.	0
FEB		.	1	.	1	.	0
MAR		.	0	.	0	.	0
APR		.	0	.	0	.	0
MAY		.	0	.	.	.	.
JUN		.	0	.	0	.	0
JUL		.	0	.	0	.	0
AUG		.	0	.	1	.	0
STAPH AUREUS ( )			DET'N LIMIT = N/A		GUIDELINE = 0 (A1)		
JAN		.	0	.	.	.	.
FEB		.	0	.	0	.	.
AUG		.	.	.	0	.	.
COLIFORM ( )			DET'N LIMIT = N/A		GUIDELINE = 0 (A1)		
JAN		.	1	.	.	.	.
FEB		.	1	.	1	.	.
AUG		.	.	.	1	.	.
TOTAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 5/100ML(A1)		
JAN		1200	360 A3C	.	0	.	0
FEB		82	18 A3C	.	52	.	0
MAR		94	0	.	0	.	0
APR		380	0	.	0	.	0
MAY		210 A3C	0	.	.	.	.
JUN		82 A3C	0	.	1	.	0
JUL		230 A3C	0	.	0	.	0
AUG		82 A3C	0	.	173 A3C	.	2 A3C
SEP		24 A3C	2 A3C	.	0 T24	.	160 A>
OCT		>160 A3C	0 T24	.	150 >	.	0 T24
NOV		3800 A3C	0 T48	.	0 T24	.	0 T24
		1600 T48	0 T48	.	.	.	.
DEC		490 A3C	.	.	.	.	.
TOTAL COLIFORM BCKGRD MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = N/A		
JAN		16300	2220	.	4	.	6
FEB		126	220	.	146	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
		RAW	TREATED	SITE 1		SITE 2	
				STANDING	FREE FLOW	STANDING	FREE FLOW
MAR		252	0	.	0	.	3
APR		2400	0	.	0	.	0
MAY		14100	0	.	.	.	.
JUN		22000	0	.	3	.	0
JUL		24000 >	0	.	0	.	0
AUG		7100	0	.	2400 >	.	500
SEP		4800 >	2400 >	.	0 T24	.	2400 >
OCT		24000 >	0 T24	.	2400 >	.	0 T24
NOV		30000 A3C	0 T48	.	0 T24	.	0 T24
		5300 T48	0 T48	.	.	.	.
DEC		11400 A3C	.	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (FLD)						
FLD CHLORINE (COMB) ( )		DET'N LIMIT = N/A		GUIDELINE = N/A		
JAN	.	.310	.	.200	.250	.200
FEB	.	.290	.150	.200	.200	.200
MAR	.	.230	.250	.200	.250	.200
APR	.	.300	.200	.250	.200	.200
MAY	.	.250	.250	.250	.200	.150
JUN	.	.230	.150	.200	.250	.200
JUL	.	.190	.050	.200	.200	.200
AUG	.	.170	.150	.250	.050	.200
SEP	.	.280	.100	.200	.050	.050
OCT	.	.230	.100	.150	.050	.100
NOV	.	.220	.	.200	.100	.100
	.	.300	.	.	.	.
DEC	.	.190	.150	.200	.100	.150
FLD CHLORINE FREE ( )		DET'N LIMIT = N/A		GUIDELINE = N/A		
JAN	.	1.020	.	.600	.	.700
FEB	.	1.050	.200	.700	.050	.600
MAR	.	1.020	.	.600	.050	.500
APR	.	.930	.	.500	.050	.500
MAY	.	.990	.	.450	.	.250
JUN	.	1.230	.	.800	.	.750
JUL	.	1.160	.	.700	.	.050
AUG	.	1.100	.	.500	.	.600
SEP	.	1.240	.	.700	.	.250
OCT	.	1.280	.250	.600	.	.250
NOV	.	1.070	.	.700	.	.250
	.	1.200	.	.	.	.
DEC	.	1.030	.150	.600	.	.250
FLD CHLORINE (TOTAL) ( )		DET'N LIMIT = N/A		GUIDELINE = N/A		
JAN	.	1.330	.	.800	.250	.900
FEB	.	1.340	.350	.900	.250	.800
MAR	.	1.250	.400	.800	.300	.700
APR	.	1.230	.300	.750	.250	.700
MAY	.	1.240	.250	.700	.200	.400
JUN	.	1.460	.150	1.000	.250	.950
JUL	.	1.450	.350	.900	.200	.250
AUG	.	1.330	.150	.750	.050	.800
SEP	.	1.520	.150	.900	.050	.300
OCT	.	1.510	.300	.750	.050	.350
NOV	.	1.290	.	.900	.100	.350
	.	1.500	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	.	1.220	.250	.800	.100	.400
FLD PH (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	8.200	7.600	7.000	7.200	7.300	7.200
FEB	8.100	7.800	7.200	7.400	7.500	7.500
MAR	8.010	7.600	7.400	7.500	7.500	7.500
APR	8.100	7.550	7.200	7.300	7.500	7.300
MAY	8.450	7.650	7.400	7.500	7.500	7.400
JUN	8.100	7.300	7.300	7.300	7.500	7.500
JUL	8.200	7.350	7.200	7.400	7.500	7.300
AUG	8.100	7.450	7.300	7.400	7.500	7.500
SEP	8.300	7.450	7.400	7.400	7.500	7.400
OCT	8.200	7.500	7.400	7.400	7.500	7.500
NOV	8.100	7.350	7.200	7.200	7.300	7.300
	7.900	7.300	.	.	.	.
DEC	8.050	7.500	7.200	7.200	7.500	7.300
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A1)	
JAN	1.500	2.000	19.000	4.000	17.000	6.000
FEB	1.000	1.500	18.000	3.700	15.500	4.500
MAR	3.000	3.000	19.000	4.200	15.500	4.500
APR	9.500	9.200	22.000	8.900	15.600	6.700
MAY	14.200	13.500	21.500	13.000	17.800	12.200
JUN	19.000	19.000	28.500	18.300	21.100	15.600
JUL	23.000	23.000	23.500	22.000	23.500	19.000
AUG	29.000	26.000	27.000	25.000	26.000	24.000
SEP	19.900	20.200	22.000	20.900	17.800	20.000
OCT	14.000	14.000	19.000	16.000	16.700	17.800
NOV	10.000	8.000	20.000	10.200	15.600	12.200
	8.000	9.000	.	.	.	.
DEC	4.000	5.000	21.500	8.500	15.600	10.000
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)	
JAN	36.000	.220	.170	.160	.320	.230
FEB	3.100	.490	.420	.390	.370	.350
MAR	2.000	.320	.240	.250	.290	.280
APR	77.000	.800	.480	.400	.410	.380
MAY	5.700	.290	.450	.510	.450	.620
JUN	11.000	.390	.490	.350	1.150	1.560
JUL	10.100	.300	.550	.340	.940	.390
AUG	6.700	.500	.380	.420	.280	.310
SEP	7.300	.510	.460	.380	.440	.460
OCT	9.800	.330	.250	.210	.230	.280

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
WDV	35.000	.190	.300	.160	.330	.250
	20.000	.580	.	.	.	.
CEC	26.000	.270	.260	.190	.210	.230

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (LAB)						
ALKALINITY (MG/L)			DET'N LIMIT = .200		GUIDELINE = 30-500 (A4)	
JAN	107.000	88.200	89.300	90.400	87.200	88.100
FEB	99.800	82.900	85.000	85.100	83.600	83.700
MAR	85.600	78.400	79.900	79.000	81.100	81.200
APR	116.000	100.500	98.800	105.200	93.500	92.200
MAY	99.900	87.000	87.500	85.200	91.300	91.600
JUN	92.000	82.300	81.900	82.400	84.200	84.100
JUL	89.300	78.700	78.900	78.900	80.600	79.800
AUG	88.200	79.500	79.200	79.100	80.600	81.000
SEP	87.900	81.300	79.100	79.000	80.200	79.700
OCT	86.600	78.400	78.900	78.400	81.000	80.700
NOV	85.300	74.600	78.900	75.300	79.800	79.500
	101.400	87.000	.	.	.	.
DEC	90.300	86.200	89.000	89.500	84.400	82.600
CALCIUM (MG/L)			DET'N LIMIT = .100		GUIDELINE = 100 (F2)	
JAN	42.200	40.800	41.000	41.800	41.000	42.000
FEB	30.800	31.400	32.600	31.200	32.200	31.000
MAR	28.400	29.400	29.400	28.800	29.800	29.800
APR	44.800	43.400	44.400	42.600	36.000	35.000
MAY	34.400	31.600	32.600	32.600	35.600	36.200
JUN	29.000	28.600	29.400	28.400	30.400	30.800
JUL	30.800	32.600	31.400	31.800	32.200	32.000
AUG	30.800	29.400	30.600	30.000	31.000	31.000
SEP	30.600	30.600	31.000	31.800	31.400	30.800
OCT	30.200	31.200	31.200	30.300	31.400	31.000
NOV	31.000	30.400	31.600	30.400	33.800	32.600
	38.400	38.000	.	.	.	.
DEC	31.800	34.400	36.400	36.200	34.000	33.200
CHLORIDE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 250 (A3)	
JAN	15.400	16.500	17.000	16.900	15.800	16.000
FEB	10.800	12.600	12.600	12.700	12.100	12.200
MAR	9.100	9.700	10.100	9.700	11.900	11.600
APR	16.900	17.500	18.000	18.200	13.400	13.100
MAY	11.100	11.700	12.700	12.300	13.000	13.600
JUN	9.600	10.400	10.600	10.400	11.200	11.000
JUL	8.300	10.100	11.000	10.900	10.600	10.300
AUG	9.200	10.000	10.600	10.400	10.500	10.300
SEP	9.800	12.800	12.400	11.900	11.500	11.400
OCT	7.100	8.600	9.000	8.600	10.000	9.800
NOV	8.700	9.700	10.500	10.200	11.500	11.500
	14.500	15.300	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	10.400	14.300	14.900	15.400	13.200	12.200
COLOUR (HZU)			DET'N LIMIT = .5		GUIDELINE = 5.0 (A3)	
JAN	16.500	1.000 <T	1.500 <T	1.000 <T	1.500 <T	1.000 <T
FEB	3.000	.500 <T	1.000 <T	6.000	1.500 <T	1.000 <T
MAR	2.000 <T	.500 <T	1.000 <T	.500 <T	.500 <T	.500 <T
APR	9.000	1.000 <T	1.500 <T	1.000 <T	.500 <T	.500 <T
MAY	2.500	.500 <T	1.000 <T	1.000 <T	1.500 <T	.500 <T
JUN	1.000 <T	.500 <T	1.000 <T	1.000 <T	1.000 <T	1.000 <T
JUL	1.500 <T	.500 <T	1.500 <T	.500 <T	1.000 <T	2.000 <T
AUG	1.500 <T	.500 <T	1.000 <T	.500 <T	1.000 <T	.500 <T
SEP	2.000 <T	.500 <T	1.000 <T	.500 <T	1.000 <T	1.000 <T
OCT	1.500 <T	.500 <T	1.000 <T	.500 <T	1.000 <T	1.000 <T
NOV	2.000 <T	.500 <T	2.500	1.000 <T	1.000 <T	1.500 <T
	3.500	.500 <T	.	.	.	.
DEC	3.000	.500 <T	1.500 <T	.500 <T	.500 <T	1.500 <T
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1		GUIDELINE = 400 (F2)	
JAN	325	331	331	333	320	327
FEB	251	258	263	258	256	257
MAR	230	229	233	229	242	242
APR	333	329	330	341	273	273
MAY	273	259	264	255	275	278
JUN	243	247	246	246	254	254
JUL	235	240	242	241	244	242
AUG	232	237	238	237	239	239
SEP	238	248	246	245	245	243
OCT	227	230	232	233	240	238
NOV	230	236	244	236	253	252
	305	297	.	.	.	.
DEC	251	291	294	303	274	261
FLUORIDE (MG/L)			DET'N LIMIT = .01		GUIDELINE = 2.400 (A1)	
JAN	.120	1.020	1.100	1.020	1.140	1.060
FEB	.080	1.220	1.020	1.180	1.200	1.180
MAR	.100	1.200	1.180	1.190	1.180	1.160
APR	.100	.900	.960	.980	1.030	.980
MAY	.090	1.220	1.200	1.210	1.210	1.160
JUN	.090	1.140	1.090	1.060	1.070	1.070
JUL	.090	1.050	1.040	1.060	1.040	1.000
AUG	.080	1.040	1.160	1.150	1.090	1.100
SEP	.080	.820	1.260	1.140	1.300	1.320
OCT	.080	.940	.980	.940	.980	1.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
NOV	.080	.940	.940	1.000	.960	.960
	.100	1.060	.	.	.	.
DEC	.100	1.020	1.020	1.060	1.080	.980
HARDNESS (MG/L)			DET'N LIMIT = .500		GUIDELINE = 80-100 (A4)	
JAN	148.000	143.000	143.000	145.000	142.000	146.000
FEB	111.000	112.000	115.000	112.000	114.000	111.000
MAR	101.000	104.000	104.000	103.000	105.000	106.000
APR	150.000	147.000	150.000	147.000	123.000	121.000
MAY	119.000	112.000	114.000	114.000	122.000	123.000
JUN	105.000	104.000	105.000	103.000	108.000	109.000
JUL	111.000	114.000	112.000	112.000	113.000	112.000
AUG	109.000	105.000	109.000	106.000	109.000	109.000
SEP	109.000	110.000	111.000	112.000	113.000	110.000
OCT	107.000	109.000	110.000	107.000	110.000	110.000
NOV	110.000	108.000	110.000	107.000	117.000	114.000
	133.000	131.000	.	.	.	.
DEC	114.000	123.000	129.000	129.000	118.000	117.000
IONCAL (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
FEB	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
MAR	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
APR	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
MAY	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
JUN	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
JUL	1.573	6.374	2.683	3.227	3.034	3.921
AUG	1.745	.071	2.234	1.004	1.328	.921
SEP	1.778	.922	3.954	6.002	5.310	3.842
OCT	1.915	5.121	4.596	2.303	2.828	2.910
NOV	4.762	5.385	1.723	3.861	5.112	2.515
	3.169	.308	.	.	.	.
DEC	1.113	3.769	1.156	3.424	2.630	.880
LANGELIERS INDEX (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.391 NAF	.108 NAF	.029 NAF	.073 NAF	.110 NAF	.064 NAF
FEB	.132 NAF	-.157 NAF	.008 NAF	-.049 NAF	.038 NAF	-.008 NAF
MAR	.144 NAF	.209 NAF	.092 NAF	.144 NAF	.023 NAF	.063 NAF
APR	.501 NAF	.066 NAF	.288 NAF	.276 NAF	.199 NAF	.060 NAF
MAY	.368 NAF	.004 NAF	.030 NAF	.008 NAF	.103 NAF	.130 NAF
JUN	.299 NAF	-.027 NAF	-.026 NAF	-.039 NAF	.097 NAF	.062 NAF
JUL	.256	-.156	-.022	-.096	.067	.151
AUG	.191	-.106	-.110	-.059	.002	.035

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	.255	-.083	-.028	-.038	.054	.033
OCT	.287	.007	.039	.019	.160	.133
NOV	.121	-.278	-.110	-.234	.010	-.077
	.319	.191	.	.	.	.
DEC	.138	-.183	.024	.090	.119	.064
MAGNESIUM (MG/L)			DET'N LIMIT = .050		GUIDELINE = 30 (F2)	
JAN	10.300	10.000	9.700	9.800	9.700	9.900
FEB	8.200	8.200	8.200	8.300	8.100	8.200
MAR	7.300	7.400	7.500	7.600	7.300	7.600
APR	9.300	9.300	9.600	9.800	8.100	8.200
MAY	8.100	8.000	8.000	8.000	8.000	8.000
JUN	7.800	7.800	7.600	7.800	7.900	7.800
JUL	8.300	8.100	8.100	8.000	7.900	7.900
AUG	7.800	7.800	7.800	7.700	7.700	7.600
SEP	8.100	8.200	8.200	8.000	8.300	8.100
OCT	7.800	7.700	7.700	7.700	7.700	7.800
NOV	7.900	7.900	7.700	7.600	7.900	8.000
	9.000	8.800	.	.	.	.
DEC	8.500	9.100	9.200	9.500	8.100	8.400
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)	
JAN	7.200	7.000	7.200	7.400	7.200	7.200
FEB	6.200	6.400	6.400	6.400	5.800	5.400
MAR	5.400	5.200	5.200	5.200	6.200	6.200
APR	8.200	7.600	8.200	8.000	6.200	6.200
MAY	6.000	5.600	6.200	6.200	6.200	6.400
JUN	4.800	5.000	4.800	5.000	5.200	5.200
JUL	5.400	5.200	5.400	5.200	5.400	5.200
AUG	5.200	5.200	5.200	5.200	5.000	5.000
SEP	6.200	6.600	6.200	6.600	6.000	6.000
OCT	4.600	4.400	4.400	4.400	5.000	5.000
NOV	5.600	5.400	5.000	5.400	6.000	5.800
	6.800	6.400	.	.	.	.
DEC	5.800	6.800	6.800	7.000	6.400	6.200
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)	
JAN	.036	.006 <T	.010	.008 <T	.010	.006 <T
FEB	.016	.002 <T	.004 <T	.004 <T	.006 <T	.002 <T
MAR	.034	.024	.008 <T	.010	.030	.008 <T
APR	.024	.008 <T	.006 <T	.010	.010	.006 <T
MAY	.042	.020	.022	.016	.018	.016
JUN	.026	.004 <T	.008 <T	.004 <T	.010	.006 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
JUL	.018	.002 <T	.008 <T	.004 <T	.004 <T	.002 <T
AUG	.018	.008 <T	.008 <T	.006 <T	.006 <T	.006 <T
SEP	.018	.012	.010	.014	.012	.010
OCT	.024	.022	.006 <T	.006 <T	.006 <T	.004 <T
NOV	.008 <T	.006 <T	.012	.010	.012	.012
	.014	.010	.	.	.	.
DEC	.014	.014	.012	.014	.016	.012
NITRITE (MG/L)		DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)		
JAN	.023	BDL	BDL	BDL	.001 <T	BDL
FEB	.004 <T	BDL	.001 <T	.001 <T	.001 <T	BDL
MAR	.022	.010	.004 <T	.002 <T	.009	.004 <T
APR	.027	.002 <T	.001 <T	.001 <T	.002 <T	.001 <T
MAY	.007	.003 <T	.003 <T	.001 <T	.001 <T	.003 <T
JUN	.004 <T	BDL	.001 <T	BDL	.001 <T	.001 <T
JUL	.004 <T	BDL	.002 <T	BDL	.001 <T	.001 <T
AUG	.006	.003 <T	.004 <T	.001 <T	.003 <T	.002 <T
SEP	.008	.004 <T	.004 <T	.004 <T	.005	.003 <T
OCT	.006	.001 <T	.002 <T	.002 <T	.002 <T	.002 <T
NOV	.005	.001 <T	.004 <T	.003 <T	.004 <T	.001 <T
	.012	.001 <T	.	.	.	.
DEC	.006	.004 <T	.001 <T	.001 <T	.001 <T	.001 <T
TOTAL NITRATES (MG/L)		DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)		
JAN	2.230	2.130	2.130	2.190	1.800	1.940
FEB	.725	.705	.715	.715	.655	.655
MAR	.230	.410	.405	.400	.470	.455
APR	2.270	1.980	2.060	2.260	.995	.980
MAY	.665	.495	.525	.525	.760	.820
JUN	.275	.280	.280	.280	.290	.285
JUL	.250	.270	.270	.265	.290	.255
AUG	.245	.240	.225	.225	.235	.235
SEP	.110	.080 <T	.110	.125	.130	.125
OCT	.220	.220	.240	.235	.205	.210
NOV	.450	.365	.400	.405	.575	.565
	2.120	1.780	.	.	.	.
DEC	.880	1.760	1.690	2.020	1.260	.965
NITROGEN TOT KJELD (MG/L)		DET'N LIMIT = .020		GUIDELINE = N/A		
JAN	.375	.180	.240	.180	.170	.140
FEB	.240	.130	.130	.130	.130	.130
MAR	.160	.090 <T	.120	.120	.110	.100
APR	.590	.250	.250	.270	.110	.170

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
MAY	.250	.130	.220	.130	.160	.140
JUN	.240	.120	.130	.120	.170	.130
JUL	.230	.110	.150	.130	.180	.130
AUG	.230	.140	.140	.130	.170	.130
SEP	.200	.140	.130	.120	.090 <T	.120
OCT	.150	.080 <T	.080 <T	.060 <T	.100	.080 <T
NOV	.275	.080 <T	.110	.080 <T	.100	.070 <T
	.340	.150	.	.	.	.
DEC	.230	.130	.180	.170	.120	.110
PH (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	8.180	7.780	7.910	7.940	8.000	7.940
FEB	8.110	7.850	7.990	7.950	8.030	8.000
MAR	8.170	7.840	7.950	7.910	8.010	7.970
APR	8.230	7.870	8.090	8.070	8.100	7.980
MAY	8.260	7.980	8.000	7.970	8.020	8.040
JUN	8.290	8.020	8.010	8.010	8.110	8.070
JUL	8.230	7.850	8.000	7.920	8.070	8.160
AUG	8.170	7.940	7.920	7.980	8.020	8.050
SEP	8.240	7.940	8.000	7.980	8.070	8.060
OCT	8.280	8.030	8.060	8.060	8.170	8.150
NOV	8.110	7.780	7.910	7.820	8.000	7.930
	8.170	8.110	.	.	.	.
DEC	8.100	7.780	7.950	8.020	8.090	8.050
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005		GUIDELINE = N/A	
JAN	.025	.001 <T	.	.	.	.
FEB	.003	.001 <T	.	.	.	.
MAR	.001 <T	.003	.	.	.	.
APR	.017	.002 <T	.	.	.	.
MAY	.004	.004	.	.	.	.
JUN	.005	.002 <T	.	.	.	.
JUL	.002 <T	.000 <T	.	.	.	.
AUG	.000 <T	.001 <T	.	.	.	.
SEP	.002	.002 <T	.	.	.	.
OCT	.007	.004	.	.	.	.
NOV	.005	.001 <T	.	.	.	.
	.003	.001 <T	.	.	.	.
DEC	.005	BDL	.	.	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002		GUIDELINE = .40 (F2)	
JAN	.040	BDL	.	.	.	.
FEB	.008 <T	.002 <T	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
MAR	.007 <T	BDL	.	.	.	.
APR	.093	.006 <T	.	.	.	.
MAY	.015	.015	.	.	.	.
JUN	.017	.003 <T	.	.	.	.
JUL	.017	.004 <T	.	.	.	.
AUG	.008 <T	BDL	.	.	.	.
SEP	.009 <T	.002 <T	.	.	.	.
OCT	.012	.003 <T	.	.	.	.
NOV	.045	BDL	.	.	.	.
	.022	.002 <T	.	.	.	.
DEC	.019	BDL	.	.	.	.
SULPHATE ( )		DET'N LIMIT = .200		GUIDELINE = 500. (A3)		
JUL	18.250	23.590	23.880	23.560	23.400	22.820
AUG	16.720	21.390	21.360	21.270	21.250	21.200
SEP	18.200	22.800	22.000	22.500	21.500	21.600
OCT	17.200	21.200	20.600	21.600	20.900	20.800
NOV	16.660	23.470	23.320	22.730	24.550	25.060
	22.050	28.440	.	.	.	.
DEC	19.500	29.500	28.000	30.000	27.000	25.500
TURBIDITY (FTU)		DET'N LIMIT = .02		GUIDELINE = 1.00 (A1)		
JAN	37.000	.230	.150	.140	.250	.160
FEB	2.300	.340	.640	.280	.340	.260
MAR	1.370	.170	.200	.180	.240	.220
APR	75.000	1.140	2.000	.360	.500	.390
MAY	3.400	.500	.420	.430	.470	.580
JUN	10.000	.390	.500	.250	1.150	1.900
JUL	10.000	.470	.700	.450	.850	.540
AUG	4.800	.680	.610	.550	.580	.530
SEP	6.100	.660	.550	.470	.520	.610
OCT	12.200	.810	.470	.260	.340	.430
NOV	40.000	.260	.780	.640	.490	.730
	21.000	.910	.	.	.	.
DEC	24.000	.540	.400	.210 <T	.400	.260

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
METALS						
SILVER (UG/L)			DET'N LIMIT = .020		GUIDELINE = 50. (A1)	
JAN	.040 <T	.020 <T	.020 <T	BDL	.030 <T	.020 <T
FEB	.040 <T	BDL	.040 <T	.030 <T	.020 <T	.030 <T
MAR	BDL	BDL	.100 <T	.030 <T	.030 <T	.030 <T
APR	BDL	BDL	BDL	BDL	.030 <T	BDL
MAY	BDL	.040 <T	.040 <T	BDL	.030 <T	BDL
JUN	BDL	BDL	BDL	BDL	.060 <T	BDL
JUL	BDL	BDL	BDL	BDL	BDL	!BT
AUG	BDL	BDL	BDL	BDL	BDL	BDL
SEP	BDL	BDL	BDL	BDL	BDL	.070 <T
OCT	BDL	BDL	BDL	.050 <T	BDL	BDL
NOV	BDL	1.900	.370 <T	1.100	.230 <T	.160 <T
	.030 <T	BDL	.	.	.	.
DEC	BDL	BDL	BDL	.030 <T	.030 <T	BDL
ALUMINUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100.(A4)	
JAN	390.000	72.000	44.000	54.000	51.000	59.000
FEB	47.000	96.000	230.000	340.000	80.000	83.000
MAR	30.000	120.000	81.000	100.000	96.000	100.000
APR	490.000	170.000	71.000	70.000	72.000	73.000
MAY	72.000	170.000	120.000	140.000	130.000	150.000
JUN	160.000	110.000	89.000	92.000	9300.000	170.000
JUL	120.000	120.000	86.000	84.000	140.000	!BT
AUG	71.000	160.000	94.000	120.000	100.000	120.000
SEP	70.000	160.000	110.000	110.000	110.000	110.000
OCT	10.080	120.000	91.000	78.000	87.000	97.000
NOV	200.000	40.000	31.000	34.000	39.000	39.000
	140.000	65.000	.	.	.	.
DEC	120.000	62.000	37.000	46.000	44.000	39.000
ARSENIC (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50.0 (A1)	
JAN	.730 <T	.370 <T	.390 <T	.370 <T	.410 <T	.370 <T
FEB	.540 <T	.620 <T	.480 <T	.580 <T	.500 <T	.390 <T
MAR	.510 <T	.400 <T	.350 <T	.450 <T	.360 <T	.400 <T
APR	.970 <T	.420 <T	.380 <T	.320 <T	.430 <T	.380 <T
MAY	.530 <T	.650 <T	.470 <T	.640 <T	.390 <T	.550 <T
JUN	.550 <T	.240 <T	.260 <T	.270 <T	.280 <T	.420 <T
JUL	.850 <T	.500 <T	.510 <T	.490 <T	.510 <T	!BT
AUG	.750 <T	.550 <T	.470 <T	.550 <T	.420 <T	.520 <T
SEP	.910 <T	.610 <T	.660 <T	.650 <T	.610 <T	.600 <T
OCT	.440 <T	.470 <T	.530 <T	.520 <T	.530 <T	.570 <T
NOV	.890 <T	.350 <T	.400 <T	.290 <T	.300 <T	.430 <T
	.550 <T	.260 <T	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	.740 <T	.380 <T	.490 <T	.590 <T	.410 <T	.700 <T
BARIUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000. (A1)	
JAN	22.000	16.000	18.000	17.000	18.000	17.000
FEB	15.000	15.000	14.000	14.000	15.000	14.000
MAR	13.000	12.000	15.000	12.000	16.000	12.000
APR	26.000	18.000	20.000	18.000	16.000	16.000
MAY	17.000	15.000	16.000	16.000	16.000	15.000
JUN	17.000	15.000	17.000	15.000	18.000	15.000
JUL	18.000	16.000	17.000	17.000	17.000	TBT
AUG	16.000	15.000	14.000	13.000	16.000	14.000
SEP	16.000	16.000	15.000	15.000	14.000	14.000
OCT	5.300	16.000	14.000	15.000	15.000	14.000
NOV	19.000	15.000	17.000	15.000	16.000	16.000
	21.000	17.000	-	-	-	-
DEC	17.000	17.000	18.000	17.000	16.000	16.000
BORON (UG/L)			DET'N LIMIT = 0.200		GUIDELINE = 5000. (A1)	
JAN	19.000 <T	18.000 <T	18.000 <T	18.000 <T	18.000 <T	18.000 <T
FEB	15.000 <T	14.000 <T	14.000 <T	14.000 <T	14.000 <T	15.000 <T
MAR	14.000 <T	15.000 <T	16.000 <T	15.000 <T	17.000 <T	15.000 <T
APR	32.000	20.000 <T	19.000 <T	17.000 <T	16.000 <T	17.000 <T
MAY	34.000	18.000 <T	18.000 <T	36.000	16.000 <T	20.000 <T
JUN	19.000 <T	15.000 <T	14.000 <T	15.000 <T	13.000 <T	15.000 <T
JUL	13.000 <T	13.000 <T	12.000 <T	12.000 <T	13.000 <T	TBT
AUG	14.000 <T	35.000	36.000	36.000	19.000 <T	33.000
SEP	53.000	27.000	51.000	49.000	46.000	22.000
OCT	14.770 <T	27.000	38.000	39.000	20.000 <T	35.000
NOV	52.000	42.000	57.000	55.000	51.000	55.000
	76.000	71.000	-	-	-	-
DEC	45.000	60.000	46.000	43.000	41.000	41.000
BERYLLIUM (UG/L)			DET'N LIMIT = 0.010		GUIDELINE = .20 (N)	
JAN	.060 <T	.030 <T	.010 <T	.020 <T	.020 <T	.020 <T
FEB	.030 <T	.030 <T	.020 <T	BDL	BDL	BDL
MAR	BDL	BDL	.020 <T	.020 <T	BDL	.010 <T
APR	BDL	BDL	BDL	BDL	BDL	BDL
MAY	.040 <T	.030 <T	BDL	.030 <T	BDL	BDL
JUN	.040 <T	.020 <T	BDL	BDL	BDL	.020 <T
JUL	BDL	BDL	BDL	BDL	BDL	TBT
AUG	BDL	BDL	.020 <T	BDL	BDL	.020 <T
SEP	.070 <T	BDL	.080 <T	.080 <T	.090 <T	.020 <T
OCT	.030 <T	.030 <T	.090 <T	.040 <T	BDL	.090 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
NOV	.060 <T	.080 <T	.100 <T	.060 <T	.030 <T	.060 <T
	.140 <T	.050 <T	.	.	.	.
DEC	.070 <T	.070 <T	.050 <T	BDL	.040 <T	.030 <T
CADMIUM (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 5.000 (A1)	
JAN	.060 <T	BDL	.450 <T	.080 <T	.080 <T	BDL
FEB	BDL	BDL	.200 <T	BDL	BDL	BDL
MAR	BDL	BDL	.220 <T	BDL	BDL	BDL
APR	BDL	BDL	.230 <T	BDL	BDL	BDL
MAY	BDL	BDL	.260 <T	BDL	BDL	BDL
JUN	.060 <T	BDL	.240 <T	BDL	.060 <T	BDL
JUL	BDL	BDL	.250 <T	.060 <T	BDL	187
AUG	BDL	BDL	.250 <T	BDL	BDL	BDL
SEP	BDL	BDL	.230 <T	BDL	BDL	BDL
OCT	BDL	BDL	.170 <T	BDL	.150 <T	BDL
NOV	.090 <T	BDL	.310 <T	BDL	BDL	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.260 <T	BDL	BDL	BDL
COBALT (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000 (H)	
JAN	.640 <T	.350 <T	.370 <T	.340 <T	1.600	.340 <T
FEB	.080 <T	.060 <T	.090 <T	.090 <T	.740 <T	.070 <T
MAR	.100 <T	.060 <T	.060 <T	.070 <T	.050 <T	.110 <T
APR	.650 <T	BDL	.030 <T	.030 <T	.040 <T	.060 <T
MAY	.090 <T	.060 <T	.080 <T	.050 <T	.080 <T	.110 <T
JUN	.240 <T	.110 <T	.090 <T	.090 <T	.220 <T	.130 <T
JUL	.170 <T	BDL	.040 <T	BDL	.040 <T	187
AUG	.170 <T	.140 <T	.080 <T	.100 <T	.110 <T	.130 <T
SEP	.160 <T	.080 <T	.050 <T	.080 <T	.060 <T	.080 <T
OCT	.030 <T	.160 <T	.130 <T	.130 <T	9.100	.180 <T
NOV	.460 <T	.080 <T	.110 <T	.090 <T	.110 <T	.090 <T
	.180 <T	.070 <T	.	.	.	.
DEC	.380 <T	.180 <T	.250 <T	.250 <T	.170 <T	.260 <T
CHROMIUM (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (A1)	
JAN	1.100	.440 <T	.370 <T	.350 <T	.410 <T	.400 <T
FEB	.470 <T	.400 <T	.700 <T	.740 <T	.450 <T	.390 <T
MAR	.410 <T	.460 <T	.380 <T	.440 <T	.480 <T	.540 <T
APR	5.300	.790 <T	.480 <T	.850 <T	.580 <T	.950 <T
MAY	2.700	.510 <T	.610 <T	3.200	.570 <T	1.200
JUN	.870 <T	.610 <T	.480 <T	.760 <T	.770 <T	.670 <T
JUL	.650 <T	.250 <T	.270 <T	.210 <T	.460 <T	187
AUG	.380 <T	2.400	2.700	2.700	1.000 <T	2.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	4.100	1.400	3.900	3.600	3.300	.830 <T
OCT	.150 <T	2.900	5.800	5.700	1.600	4.900
NOV	6.000	4.200	6.200	6.200	5.100	5.500
	6.000	5.600	.	.	.	.
DEC	5.300	5.700	5.400	4.700	4.900	4.600
COPPER (UG/L)			DET'N LIMIT = .100		GUIDELINE = 1000 (A3)	
JAN	15.000	17.000	11.000	2.200	54.000	4.600
FEB	13.000	1.300	8.500	1.700	42.000	3.300
MAR	13.000	.900 <T	6.500	1.400	40.000	3.200
APR	56.000	3.300	5.900	2.000	42.000	3.700
MAY	37.000	.880 <T	5.800	1.300	32.000	3.800
JUN	15.000	1.400	5.900	1.800	710.000	4.500
JUL	19.000	1.700	8.800	1.900	43.000	!BT
AUG	25.000	1.100	6.900	390.000	29.000	4.600
SEP	37.000	.980 <T	6.100	1.900	27.000	3.900
OCT	7.900	15.000	4.600	2.000	27.000	3.700
NOV	13.000	1.100	5.800	2.100	71.000	37.000
	14.000	1.300	.	.	.	.
DEC	18.000	1.100	11.000	2.300	59.000	27.000
IRON (UG/L)			DET'N LIMIT = 4.000		GUIDELINE = 300. (A3)	
JAN	480.000	100.000	83.000	15.000 <T	36.000 <T	19.000 <T
FEB	68.000	48.000	530.000	580.000	53.000	28.000 <T
MAR	62.000	14.000 <T	60.000	16.000 <T	25.000 <T	29.000 <T
APR	940.000	41.000	39.000 <T	18.000 <T	36.000 <T	22.000 <T
MAY	130.000	17.000 <T	46.000 <T	25.000 <T	50.000 <T	36.000 <T
JUN	240.000	14.000 <T	42.000 <T	15.000 <T	73.000	68.000
JUL	240.000	10.000 <T	90.000	12.000 <T	59.000	!BT
AUG	160.000	9.200 <T	31.000 <T	13.000 <T	14.000 <T	8.800 <T
SEP	150.000	14.000 <T	50.000 <T	11.000 <T	31.000 <T	47.000 <T
OCT	7.110 <T	15.000 <T	37.000 <T	9.100 <T	29.000 <T	33.000 <T
NOV	520.000	BDL	61.000	7.400 <T	26.000 <T	45.000 <T
	220.000	BDL	.	.	.	.
DEC	220.000	7.100 <T	37.000 <T	BDL	22.000 <T	34.000 <T
MERCURY (UG/L)			DET'N LIMIT = 0.010		GUIDELINE = 1.000 (A1)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	.040	.040	.	.010	.	.010
MAR	.070	.070	.	.010	.	.010
APR	.140	.120	.	.020	.	.010
MAY	.210	.230	.	.050 <T	.	.020 <T
JUN	.170	.220	.	.020 <T	.	.030 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
[illegible]	.020 <T	.040 <T	.	.040 <T	.	.030 <T
[illegible]	.130	.150	.	.040 <T	.	.030 <T
SEP	.130	.160	.	.050 <T	.	.170
OCT	.140	.160	.	.050 <T	.	.130
[illegible]	.120	.100	.	.060	.	.110
	BDL	BDL	.	.	.	.
DEC	.090	.130	.	.050 <T	.	.100
MANGANESE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 50.0 (A3)	
[illegible]	9.000	3.000	4.000	2.000	2.400	1.400
FEB	2.500	1.600	7.200	7.300	2.300	2.000
[illegible]	3.000	.950	2.000	1.900	1.100	2.000
[illegible]	35.000	2.000	1.700	1.800	1.400	1.500
[illegible]	5.900	1.000	1.700	2.100	3.500	2.400
[illegible]	8.500	.730	1.700	1.000	3.300	3.000
[illegible]	7.900	.350	2.800	.990	2.100	!BT
[illegible]	6.800	.590	1.400	1.400	1.300	.730
SEP	7.600	1.100	1.800	1.500	3.500	4.600
OCT	.110 <T	.400 <T	1.300	1.400	8.800	3.000
[illegible]	28.000	.430 <T	1.900	1.500	3.100	3.700
	10.000	.450 <T	.	.	.	.
DEC	9.100	.520	1.500	1.800	2.000	3.300
[illegible] (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 500 (H)	
[illegible]	.420 <T	.830	.770	.860	.750	.790
FEB	.570	.560	.600	.630	.570	.580
[illegible]	.500	.500	.550	.480 <T	.490 <T	.550
[illegible]	.380 <T	.720	.720	.810	.610	.660
[illegible]	.590	.650	.680	.680	.650	.650
[illegible]	.440 <T	.590	.600	.590	.580	.590
[illegible]	.510	.610	.610	.610	.640	!BT
[illegible]	.470 <T	.570	.580	.580	.550	.500 <T
SEP	.610	.760	.710	.680	.620	.620
OCT	.610	.640	.510	.480 <T	.600	.500 <T
[illegible]	.260 <T	.670	.570	.540	.630	.620
	.570	.310	.	.	.	.
DEC	.350 <T	.700	.680	.770	.690	.560
[illegible] (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (F3)	
[illegible]	5.300	4.500	4.600	4.600	4.900	4.300
FEB	.640 <T	.580 <T	.630 <T	.580 <T	.520 <T	.320 <T
[illegible]	1.100 <T	BDL	.580 <T	.640 <T	.540 <T	.710 <T
[illegible]	1.600	BDL	BDL	.510 <T	.300 <T	.630 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	BDL	BDL	BDL	BDL	1.000 <T	.230 <T
JUL	1.300 <T	.750 <T	1.000 <T	.720 <T	.840 <T	!BT
AUG	.890 <T	.410 <T	.470 <T	.750 <T	.500 <T	.510 <T
SEP	.310 <T	BDL	BDL	BDL	BDL	BDL
OCT	.200 <T	2.600	1.100 <T	.380 <T	1.300 <T	1.000 <T
NOV	1.300 <T	BDL	BDL	BDL	.170 <T	.440 <T
	BDL	BDL	.	.	.	.
DEC	2.000 <T	1.000 <T	1.500 <T	1.700 <T	1.500 <T	1.500 <T
LEAD (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50. (A1)	
JAN	1.700	.920	3.700	1.200	4.300	.370
FEB	.650	.410	2.600	.810	4.500	.670
MAR	.780	.040 <T	2.100	.700	3.100	.290
APR	4.100	.250	2.500	1.000	2.800	.320
MAY	20.000	.100 <T	2.300	1.000	2.900	.360
JUN	1.600	.090 <T	3.100	1.400	1300.000	1.300
JUL	1.800	.100 <T	5.100	2.100	3.800	!BT
AUG	3.000	.080 <T	2.800	400.000 RRV	2.800	.490
SEP	3.500	.050 <T	2.800	1.600	2.400	.400
OCT	.430	4.900	2.400	1.500	5.600	.470
NOV	2.900	BDL	3.900	1.300	3.200	1.300
	5.500	.070 <T	.	.	.	.
DEC	4.000	.030 <T	3.200	1.300	3.200	.940
ANTIMONY (UG/L)			DET'N LIMIT = .050		GUIDELINE = 146. (D4)	
JAN	.150 <T	.170 <T	.150 <T	.140 <T	.180 <T	.140 <T
FEB	.130 <T	.180 <T	.140 <T	.140 <T	.200	.150 <T
MAR	.130 <T	.120 <T	.180 <T	.110 <T	.190 <T	.150 <T
APR	.150 <T	.140 <T	.130 <T	.160 <T	.140 <T	.170 <T
MAY	.190 <T	.190 <T	.180 <T	.170 <T	.170 <T	.150 <T
JUN	.120 <T	.150 <T	.150 <T	.130 <T	.270	.090 <T
JUL	.130 <T	.140 <T	.150 <T	.130 <T	.210	!BT
AUG	.470	.420	.660	.390	.730	.420
SEP	.390	.440	.450	.440	.560	.450
OCT	.660	.230	.500	.510	16.000	.570
NOV	.330	.400	.520	.460	.580	.520
	.240	.250	.	.	.	.
DEC	.230	.260	.550	.330	.330	.280
SELENIUM (UG/L)			DET'N LIMIT = 0.200		GUIDELINE = 10. (A1)	
JAN	.200 <T	1.100 <T	.930 <T	.940 <T	.610 <T	.910 <T
FEB	.960 <T	1.200 <T	1.100 <T	.930 <T	1.300 <T	1.200 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
MAR	.990 <T	1.200 <T	1.900 <T	1.200 <T	2.300 <T	1.800 <T
APR	.940 <T	.500 <T	1.700 <T	1.800 <T	1.900 <T	.940 <T
MAY	1.300 <T	.610 <T	2.500 <T	2.000 <T	2.100 <T	1.800 <T
JUN	BDL	BDL	.620 <T	.810 <T	BDL	BDL
JUL	.560 <T	.710 <T	1.200 <T	1.300 <T	1.000 <T	!BT
AUG	BDL	.870 <T	2.400 <T	2.200 <T	1.200 <T	1.600 <T
SEP	1.600 <T	BDL	.780 <T	BDL	1.500 <T	BDL
OCT	1.200 <T	5.600 <T	3.300 <T	2.700 <T	4.700 <T	3.300 <T
NOV	BDL	2.300 <T	4.000 <T	2.800 <T	2.400 <T	2.100 <T
	2.100 <T	1.800 <T	.	.	.	.
DEC	1.900 <T	3.900 <T	5.900 <T	4.000 <T	3.900 <T	3.800 <T
STRONTIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 2000.(H)	
JAN	150.000	150.000	150.000	150.000	150.000	140.000
FEB	110.000	110.000	110.000	110.000	120.000	110.000
MAR	110.000	92.000	110.000	94.000	110.000	110.000
APR	180.000	160.000	160.000	170.000	130.000	140.000
MAY	140.000	120.000	130.000	130.000	130.000	130.000
JUN	110.000	120.000	120.000	110.000	120.000	110.000
JUL	110.000	110.000	120.000	110.000	110.000	!BT
AUG	110.000	110.000	93.000	90.000	100.000	96.000
SEP	120.000	130.000	120.000	120.000	120.000	120.000
OCT	52.000	100.000	110.000	100.000	100.000	100.000
NOV	110.000	110.000	120.000	110.000	130.000	120.000
	150.000	140.000	.	.	.	.
DEC	110.000	140.000	130.000	130.000	120.000	110.000
TITANIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = N/A	
JAN	10.000	4.500	4.500	4.900	4.900	4.500
FEB	4.800	5.200	4.300	4.000	4.300	4.400
MAR	3.200	3.000	2.700	3.000	2.800	3.100
APR	5.900	3.800	3.200	3.200	3.200	3.100
MAY	9.200	6.800	6.400	6.800	7.300	7.800
JUN	8.200	3.300	3.600	3.100	5.500	4.800
JUL	6.400	2.400	2.100	2.000 <T	2.900	!BT
AUG	9.300	7.700	5.900	6.400	7.600	6.800
SEP	6.100	6.500	5.600	5.100	6.700	7.100
OCT	1.690 <T	4.400	3.600	3.900	6.100	5.400
NOV	7.500	4.800	4.500	4.900	6.300	6.700
	13.000	8.800	.	.	.	.
DEC	5.700	5.000	4.800	5.000	5.800	6.500
THALLIUM (UG/L)			DET'N LIMIT = .010		GUIDELINE = 13. (D6)	
JAN	.040 <T	.011	.020 <T	BDL	BDL	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.010 <T	.010 <T	.020 <T	.020 <T	.010 <T	BDL
MAR	.010 <T	.010 <T	.020 <T	.010 <T	BDL	BDL
APR	.040 <T	.040 <T	BDL	BDL	.020 <T	BDL
MAY	.020 <T	BDL	BDL	BDL	BDL	BDL
JUN	BDL	BDL	BDL	BDL	.220	BDL
JUL	BDL	.020 <T	.020 <T	BDL	BDL	!BT
AUG	BDL	BDL	BDL	.070 <T	BDL	BDL
SEP	BDL	BDL	BDL	BDL	BDL	.020 <T
OCT	BDL	.020 <T	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	.030 <T	BDL	BDL	BDL	BDL
URANIUM (UG/L)			DET'N LIMIT = .020		GUIDELINE = 20. (A2)	
JAN	.720	.350	.280	.390	.270	.290
FEB	.330	.360	.330	.360	.310	.310
MAR	.260	.260	.270	.260	.250	.250
APR	.820	.490	.370	.460	.230	.270
MAY	.380	.320	.330	.320	.370	.370
JUN	.270	.210	.190 <T	.210	.220	.220
JUL	.280	.150 <T	.170 <T	.150 <T	.180 <T	!BT
AUG	.230	.210	.150 <T	.130 <T	.170 <T	.170 <T
SEP	.250	.200 <T	.190 <T	.200 <T	.180 <T	.210
OCT	.140 <T	.260	.210	.200 <T	.170 <T	.190 <T
NOV	.280	.100 <T	.130 <T	.120 <T	.070 <T	.100 <T
	.420	.260	.	.	.	.
DEC	.340	.290	.220	.280	.220	.210
VANADIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100 (M)	
JAN	1.300	.950	.560	.750	.610	.670
FEB	.290 <T	.340 <T	.320 <T	.320 <T	.390 <T	.270 <T
MAR	.250 <T	.380 <T	.280 <T	.330 <T	.310 <T	.310 <T
APR	1.500	.640	.430	.510	.380 <T	.340 <T
MAY	.320 <T	.390 <T	.370 <T	.370 <T	.420 <T	.390 <T
JUN	.670	.630	.490 <T	.480 <T	1.800	.630
JUL	.550	.650	.560	.520	.580	!BT
AUG	.500 <T	.680	.560	.630	.600	.620
SEP	.560	.600	.520	.570	.550	.660
OCT	.280 <T	.570	.430 <T	.530	.490 <T	.530
NOV	.880	.700	.490 <T	.540	.380 <T	.370 <T
	.650	.640	.	.	.	.
DEC	.460 <T	.610	.530	.510	.340 <T	.280 <T
ZINC (UG/L)			DET'N LIMIT = .001		GUIDELINE = 5000. (A3)	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	7.200	5.000	530.000	19.000	52.000	14.000
FEB	3.800	2.700	240.000	12.000	27.000	8.300
MAR	3.100	.590 <T	190.000	11.000	24.000	7.100
APR	16.000	1.800	150.000	12.000	35.000	8.500
MAY	4.900	.640 <T	130.000	9.100	18.000	8.500
JUN	3.200	.640 <T	150.000	14.000	22.000	5.800
JUL	3.100	.780 <T	410.000	19.000	26.000	!BT
AUG	3.400	1.000 <T	150.000	80.000	15.000	7.300
SEP	4.800	.860 <T	170.000	14.000	18.000	10.000
OCT	.330 <T	15.000	140.000	13.000	19.000	9.800
NOV	6.700	1.300	280.000	18.000	35.000	3.900
	9.000	1.200	.	.	.	.
DEC	5.700	1.500	210.000	16.000	22.000	2.500

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

		WATER TREATMENT PLANT			DISTRIBUTION SYSTEM		
	SITE			SITE 1		SITE 2	
	TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
CHLOROAROMATICS							
HEXACHLOROETHANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 1900 (D4)		
JAN		BDL	BDL	.	BDL	.	BDL
FEB		BDL	BDL	.	BDL	.	BDL
MAR		BDL	BDL	.	BDL	.	BDL
APR		BDL	5.000 <T	.	4.000 <T	.	2.000 <T
MAY		BDL	BDL	.	!NR	.	!NR
JUN		BDL	BDL	.	BDL	.	5.000 <T
JUL		BDL	BDL	.	BDL	.	BDL
AUG		BDL	BDL	.	BDL	.	BDL
SEP		BDL	BDL	.	BDL	.	BDL
OCT		BDL	BDL	.	BDL	.	BDL
NOV		BDL	BDL	.	BDL	.	BDL
		BDL	BDL	.	.	.	.
DEC		BDL	BDL	.	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
PESTICIDES & PCB						
ALPHA BHC (NG/L)		DET'N LIMIT = 1.000		GUIDELINE = 700 (G)		
JAN	1.000 <T	1.000 <T	.	2.000 <T	.	2.000 <T
FEB	BDL	3.000 <T	.	2.000 <T	.	2.000 <T
MAR	1.000 <T	2.000 <T	.	2.000 <T	.	2.000 <T
APR	1.000 <T	2.000 <T	.	2.000 <T	.	2.000 <T
MAY	2.000 <T	BDL	.	INR	.	INR
JUN	2.000 <T	2.000 <T	.	1.000 <T	.	3.000 <T
JUL	2.000 <T	3.000 <T	.	5.000 <T	.	BDL
AUG	BDL	BDL	.	3.000 <T	.	2.000 <T
SEP	1.000 <T	4.000 <T	.	5.000 <T	.	1.000 <T
OCT	BDL	2.000 <T	.	2.000 <T	.	2.000 <T
NOV	2.000 <T	2.000 <T	.	2.000 <T	.	BDL
	BDL	2.000 <T	.	.	.	.
DEC	3.000 <T	BDL	.	3.000 <T	.	3.000 <T
LINDANE (NG/L)		DET'N LIMIT = 1.000		GUIDELINE = 4000 (A1)		
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	1.000 <T	.	2.000 <T	.	BDL
MAY	BDL	2.000 <T	.	INR	.	INR
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	2.000 <T	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	2.000 <T	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
	BDL	1.000 <T	.	.	.	.
DEC	1.000 <T	BDL	.	1.000 <T	.	1.000 <T
ATRAZINE (NG/L)		DET'N LIMIT = 50.00		GUIDELINE = 60000 (B3)		
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	210.000 <T	.	250.000 <T	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
	70.000 <T	190.000 <T	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	BDL	BDL	.	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
PHENOLICS (UG/L)	PHENOLICS		DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)	
JAN	.600 <T	BDL	.	.	.	.
FEB	.600 <T	.600 <T	.	.	.	.
MAR	BDL	BDL	.	.	.	.
APR	.200 <T	BDL	.	.	.	.
MAY	BDL	BDL	.	.	.	.
JUN	1.000 <T	.400 <T	.	.	.	.
JUL	.600 <T	.200 <T	.	.	.	.
AUG	BDL	BDL	.	.	.	.
SEP	BDL	BDL	.	.	.	.
OCT	.600 <T	.600 <T	.	.	.	.
NOV	.600 <T	.400 <T	.	.	.	.
	.600 <T	.600 <T	.	.	.	.
DEC	.600 <T	1.000	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
VOLATILES						
BENZENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 5.0 (81)	
JAN	BDL	.050 <T	.	BDL	.	BDL
MAR	BDL	.050 <T	.	.050 <T	.	.100 <T
APR	BDL	BDL	.	[illegible]	.	.050 <T
MAY	BDL	BDL	.	BDL	.	.050 <T
JUN	BDL	BDL	.	.050 <T	.	BDL
JUL	BDL	.050 <T	.	.100 <T	.	.100 <T
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	.050 <T
NOV	BDL	BDL	.	BDL	.	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.	BDL	.	BDL
TOLUENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 24.0 (84)	
JAN	BDL	.050 UCS	.	.150 UCS	.	.100 UCS
MAR	BDL	.050 UCS	.	BDL	.	BDL
APR	BDL	.050 UCS	.	[illegible]	.	.100 UCS
MAY	BDL	BDL	.	.100 UCS	.	.200 UCS
JUN	BDL	.050 <T	.	.100 <T	.	.350 <T
JUL	BDL	BDL	.	.100 <T	.	.150 <T
AUG	BDL	.050 <T	.	.050 <T	.	.100 <T
SEP	BDL	.050 <T	.	.150 <T	.	.150 <T
OCT	.100 <T	.250 <T	.	BDL	.	.100 <T
NOV	BDL	BDL	.	BDL	.	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.	.150 <T	.	BDL
ETHYLBENZENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 2.4 (84)	
JAN	BDL	.050 <T	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	[illegible]	.	.400 <T
MAY	BDL	BDL	.	.050 <T	.	.100 <T
JUN	BDL	.050 <T	.	.050 <T	.	.250 <T
JUL	BDL	BDL	.	.050 <T	.	.100 <T
AUG	BDL	BDL	.	.100 <T	.	.100 <T
SEP	BDL	BDL	.	.100 <T	.	.100 <T
OCT	.050 <T	.050 <T	.	.050 <T	.	.050 <T
NOV	BDL	BDL	.	BDL	.	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	.050 <T	.	.100 <T	.	.100 <T
P-XYLENE (UG/L)			DET'N LIMIT = .100		GUIDELINE = 300 (84)	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	.100 <T
APR	BDL	BDL	.	!NN	.	.100 RMP
MAY	BDL	BDL	.	BDL	.	.200 RMP
JUN	BDL	.100	.	.100	.	.300 <T
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.	BDL	.	BDL
M-XYLENE (UG/L)		DET'N LIMIT = .100		GUIDELINE = 300 (84)		
JAN	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	.000 RMP
APR	BDL	BDL	.	!NN	.	.100 <T
MAY	BDL	BDL	.	BDL	.	.200 <T
JUN	BDL	.100 <T	.	.100 <T	.	.300 <T
JUL	BDL	BDL	.	.100 <T	.	.100 <T
AUG	BDL	BDL	.	.100 <T	.	.100 <T
SEP	BDL	BDL	.	BDL	.	.100 <T
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.	BDL	.	BDL
O-XYLENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 300 (84)		
JAN	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	.100 <T
APR	BDL	BDL	.	!NN	.	BDL
MAY	BDL	BDL	.	BDL	.	.100 <T
JUN	BDL	.150 <T	.	.100 <T	.	.200 <T
JUL	BDL	BDL	.	.050 <T	.	.100 <T
AUG	BDL	BDL	.	.050 <T	.	.100 <T
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.	.050 <T	.	BDL
STYRENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 46.5 (D2)		
OCT	.100 <T	BDL	.	BDL	.	.100 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
[illegible]	.250 <T	BDL	.	BDL	.	.050 <T
	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.	BDL	.	BDL
CHLOROFORM (UG/L)			DET'N LIMIT = .100		GUIDELINE = 350 (A1+)	
JAN	BDL	41.000	.	29.000	.	36.000
FEB	.200 <T	28.300	.	22.700	.	28.900
APR	.300 <T	51.100	.	[illegible]	.	38.900
MAY	BDL	28.800	.	34.400	.	39.600
JUN	BDL	30.200	.	32.400	.	34.200
JUL	BDL	28.800	.	36.200	.	26.200
AUG	BDL	31.100	.	31.600	.	38.400
SEP	BDL	28.800	.	32.400	.	28.000
OCT	BDL	29.300	.	17.200	.	26.400
NOV	.200 <T	17.200	.	19.000	.	19.400
	BDL	30.300	.	.	.	.
DEC	BDL	24.000	.	26.600	.	19.900
1,2 DICHLOROETHANE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 5.0 (D1)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	[illegible]	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	.250 <T	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.	BDL	.	BDL
DICHLOROBROMOMETHANE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 350 (A1+)	
JAN	BDL	11.500	.	9.500	.	10.500
FEB	.100 <T	12.700	.	12.900	.	15.600
APR	BDL	16.350	.	[illegible]	.	14.900
MAY	BDL	15.400	.	16.600	.	17.700
JUN	BDL	10.750	.	11.750	.	14.400
JUL	BDL	12.700	.	17.050	.	15.350
AUG	BDL	14.300	.	12.800	.	17.300
SEP	BDL	15.100	.	16.350	.	15.350
OCT	BDL	12.250	.	10.300	.	14.350
NOV	BDL	6.950	.	10.150	.	[illegible]

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
[illegible]	BDL	16.150	.	.	.	.
[illegible]	BDL	13.550	.	14.600	.	13.150
C-L2BD1BROMOMETHANE (UG/L)			DET'N LIMIT = .100		GUIDELINE = 350 (A1+)	
[illegible]	BDL	2.700	.	2.500	.	2.500
[illegible]	BDL	5.500	.	6.300	.	7.500
[illegible]	BDL	3.200	.	!NN	.	3.400
[illegible]	BDL	5.700	.	6.000	.	5.900
[illegible]	BDL	4.700	.	5.300	.	5.300
[illegible]	BDL	4.000	.	4.900	.	4.900
[illegible]	BDL	5.700	.	6.400	.	5.900
[illegible]	BDL	6.500	.	7.300	.	8.400
[illegible]	BDL	5.100	.	4.800	.	6.400
[illegible]	BDL	3.100	.	3.800	.	4.200
	BDL	5.700	.	.	.	.
[illegible]	BDL	5.000	.	4.900	.	5.900
T-DICHLOROETHYLENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 10.0 (C2)	
[illegible]	BDL	BDL	.	BDL	.	BDL
[illegible]	BDL	BDL	.	BDL	.	BDL
[illegible]	BDL	.	.	!NN	.	.550
[illegible]	BDL	.100 <T	.	.100 <T	.	.100 <T
[illegible]	BDL	BDL	.	BDL	.	BDL
[illegible]	BDL	BDL	.	BDL	.	BDL
[illegible]	BDL	BDL	.	BDL	.	BDL
[illegible]	BDL	BDL	.	BDL	.	BDL
[illegible]	BDL	BDL	.	BDL	.	.250 <T
[illegible]	BDL	BDL	.	BDL	.	BDL
	BDL	BDL	.	.	.	.
[illegible]	BDL	BDL	.	BDL	.	BDL
[illegible]	BDL	BDL	DET'N LIMIT = .200		GUIDELINE = 350 (A1+)	
[illegible]	BDL	BDL	.	BDL	.	BDL
[illegible]	BDL	.200 <T	.	.200 <T	.	.400 <T
[illegible]	BDL	BDL	.	!NN	.	.200 <T
[illegible]	BDL	.400 <T	.	.400 <T	.	BDL
[illegible]	BDL	.400 <T	.	.400 <T	.	.200 <T
[illegible]	BDL	BDL	.	.200 <T	.	.200 <T
[illegible]	BDL	.400 <T	.	.400 <T	.	.200 <T
[illegible]	BDL	.400 <T	.	.400 <T	.	.500 <T
[illegible]	BDL	.400 <T	.	.400 <T	.	.400 <T
[illegible]	BDL	.200 <T	.	.200 <T	.	.200 <T
	BDL	.400 <T	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM WINDSOR WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	BDL	.400 <T	.	.200 <T	.	.400 <T
1,2 DICHLOROBENZENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 200 (B1)		
JAN	BDL	BDL	.	BDL	.	BDL
MAR	.100 <T	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	[illegible]	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	.050 <T	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.	BDL	.	BDL
TOTL TRIHALOMETHANES (UG/L)		DET'N LIMIT = .500		GUIDELINE = 350 (A1)		
JAN	BDL	55.200	.	41.000	.	49.000
MAR	.300	46.700	.	42.100	.	52.400
APR	.300 <T	70.600	.	[illegible]	.	58.400
MAY	BDL	50.300	.	57.400	.	63.400
JUN	BDL	46.050	.	49.850	.	54.100
JUL	BDL	45.500	.	58.350	.	46.650
AUG	BDL	51.500	.	51.200	.	61.800
SEP	BDL	50.800	.	56.450	.	52.350
OCT	BDL	47.050	.	32.700	.	47.550
NOV	BDL	27.450	.	33.150	.	34.850
	BDL	52.550	.	.	.	.
DEC	BDL	42.950	.	46.300	.	39.350

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
P/A BOTTLE		0	0 (A1*)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	5000. (B1)
PENTACHLOROPHENOL	NG/L	50.	60000. (B1)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DIMENSIONLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	°C	N/A	<15 °C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DIMENSIONLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	146. (D4)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	100000. (A1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	280000.	(B1)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	87000.	(B3)
PICHLORAM	NG/L	100.	2450000.	(D3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	14000.	(A1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION	NG/L	N/A	N/A	
MALATHION	NG/L	20.	160000.	(G)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(B3)
METHYLTRITHION	NG/L	20.	N/A	
PARATHION	NG/L	20.	35000.	(B1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
PHORATE (THIMET)	NG/L	20.	35.	(D2)
RELDAN	NG/L	20.	N/A	
RONNEL	NG/L	20.	N/A	
AMINOCARB	NG/L	N/A	N/A	
BENOMYL	NG/L	N/A	N/A	
BUX (METALKAMATE)	NG/L	2000.	N/A	
CARBOFURAN	NG/L	2000.	18000.	(D3)
CICP (CHLORPROPHAM)	NG/L	2000.	350000.	(G)
DIALLATE	NG/L	2000.	30000.	(H)
EPTAM	NG/L	2000.	N/A	
IPC	NG/L	2000.	N/A	
PROPOXUR (BAYGON)	NG/L	2000.	90000.	(G)
SEVIN (CARBARYL)	NG/L	200.	70000.	(A1)
SUTAN (BUTYLATE)	NG/L	2000.	245000.	(D3)
VOLATILES				
BENZENE	UG/L	.050	5.0	(B1)
TOLUENE	UG/L	.050	24.0	(B4)
ETHYLBENZENE	UG/L	.050	2.4	(B4)
PARA-XYLENE	UG/L	.100	300.	(B4)
META-XYLENE	UG/L	.100	300.	(B4)
ORTHO-XYLENE	UG/L	.050	300.	(B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0	(D1)
ETHLYENE DIBROMIDE	UG/L	.05	50.	(G)
METHYLENE CHLORIDE	UG/L	.500	1750.	(D3)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	350.	(D3)
1,1-DICHLOROETHANE	UG/L	.100	N/A	
CHLOROFORM	UG/L	.100	350.	(A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200.	(D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0	(D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0	(D1)
1,2-DICHLOROPROPANE	UG/L	.050	10.0	(G)
TRICHLOROETHYLENE	UG/L	.100	5.0	(D1)
DICHLOROBROMOMETHANE	UG/L	.050	350.	(A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60	(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350.	(A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0	(C2)
BROMOFORM	UG/L	.200	350.	(A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17	(D4)
CHLOROBENZENE	UG/L	.100	1510.	(D3)
1,4-DICHLOROBENZENE	UG/L	.100	5.0	(B1)
1,3-DICHLOROBENZENE	UG/L	.100	130.	(G)
1,2-DICHLOROBENZENE	UG/L	.050	200.	(B1)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A	
TOTAL TRIHALOMETHANES	UG/L	.500	350.	(A1)
STYRENE	UG/L	.05	46.5	(D2)